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THE SCIENTIFIC WORLD VIEW

By the Same Author

GREATER ITALY
THE TREND OF HISTORY
THE PASSING OF POLITICS
THIRTY YEARS OF MODERN HISTORY

THE SCIENTIFIC WORLD VIEW

By WILLIAM KAY WALLACE

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PREFACE

SCIENCE has placed in the hands of the peoples of the West the domination of the globe. The whole world is being industrialised. Industrialism is the most significant social factor in modern life. Whether we like it or not, a new outlook on life is in the making that differs fundamentally from the accepted religious interpretation of the universe.

The growth of the scientific spirit in Modern Times has been slow but continuous. Historically we may trace its first beginnings in the 15th century. Hand in hand with the degradation and decay of religion we discover the gradual rise of science to the position of first importance that it occupies to-day. But down to our own times science was confined to a narrow field. It was concerned exclusively with the physical universe. It was "applied science" in a technical sense of the term. It was considered to be devoid of all spiritual significance, incapable of dealing with the ultimate problems of existence. Now new implications of science are being discovered. Its spiritual character is being revealed. Science no longer applies exclusively to matter and has come to concern itself with mind. New interpretations of mind and matter are being offered. The old dualism is disappearing. A new level of mind is being reached. New mental powers are emerging that are making for a security and efficiency in social life never realised in the past.

The result is the breakdown of the older religious

world view. Its theology and philosophy of life, based on pre-scientific premises, are not longer tenable. The orthodox religious interpretation of the universe must be discarded. The time has come for us to go back to fundamentals. We must find more solid foundations for our beliefs than those that religion has to offer. Morality is emancipating itself from religious control and is seeking a broader basis in the scientific outlook on life.

I have sought to examine impartially and without preconceptions or bias, the implications of the religious world view, to present to you the spiritual aspects of science, and then sketch in brief outline some of the factors of the new morality in the making. The method adopted is historical. History takes into account the two opposing ideas of continuity and change. Though the emphasis of history is apparently confined to noting changes, the drift of affairs shows an unbroken continuity of events. Periods of rapid change are followed by epochs of apparent stagnation. In our own times the change in the centre of gravity in the social order appears to be the more important. But this should not lead us to neglect the factors making for stability. All that is new in the world is the result of a slow and steady process of modification of what has gone before. The underlying motives remain the same, though their interpretation may be changed.

The scientific world view is not so essentially different from the religious, though its method of approach to the problems of existence differs radically. As we see it, it is a gradual modification of the religious outlook on life, a new stage in the evolution of mind, that we recognise to-day as science. However spectacular the changes may appear to be, however great the difference

between the new world and the old, there is an essential continuity underlying all of these changes that links the present with the past, the new morality with the old.

It is important to realise that the scientific world view is not some extraneous growth that can flourish side by side with the religious world view. It is necessary for us to recognise that the new interpretation of the universe is possible because a new economy has already developed. The expansion of industrialism, the creation of a world economy, are part of a broader outlook on life, a new conception of world unity, a new world morality.

The more closely we examine the phases of the evolution of industrialism and its scientific foundations, the more pregnantly do we realise in how far the new world differs from the old. We should not fail to do justice to the religious institutions of the past and take into consideration the inner vision that they reveal. On the other hand a true historic sense requires us to recognise that they belong to a world different from our own.

In previous books I have sought to trace the rise of the new economy, and show its firm historical foundations. I would here set forth the reasons that are making unavoidable a new world view. Candour prompts us to admit that in spite of the lingering fondness for it, the word "divine," in all of its aspects, no longer interprets a valid social motive. Divine rights, whether of gods or kings, are no longer appealed to; divine sanctions and a divine will are vanishing.

What then is to take the place of the Godhead, what new term can be made use of that will fill the place left vacant by the departure of divinity? Science teaches new methods of adjustment and control, and shows the way to the better adaptation of means to ends. Though

it may seem to some a rash statement, yet in the course of this inquiry I hope to be able to show that there is adequate historical evidence to prove that in the scientific world view the old ideas of *divinity* are being replaced by those clustering about the term *efficiency*. In the new world in the making the efficient is taking the place of the divine.

Here we have the crux of the matter. The divine, as the definition of the word itself reveals, is based on guess-work. The characteristics of divinity are vague, nebulous, uncertain and capricious. They are associated with the belief in some superhuman authority that lies beyond the realm of factual experience. The scientific interpretation of the universe is grounded on the solid foundation of facts. Here experience takes precedence over authority, proof over mere assertion. Reality assumes a concrete, tangible form. The world as it is, is not accepted in a supine spirit. We are all of us anxious and eager to make our way in this world, not to be the mere puppets of circumstance. We are striving to choose, and achieve in so far as possible, the one best way of life. The function of science is to point out how this way is to be discovered and followed. It assists us to increase our capacities and powers as active agents. We are no longer content to dream our lives away, to fix our gaze on the City of God. We would fashion our destiny, mould our experience in the quest of a more abundant life.

The religious world view endowed the governments of the Western world, the political state system as it exists to-day, with a quasi-divine character. Political institutions retained more or less intact the idea of divinity. The State took over and secularised most of the fundamental conceptions of the Church, and gave new

names to the older notions of divine authority. The principle of authority was refashioned and made to serve as the moral basis of state sovereignty. The history of the past century and a half tells the story of the struggle to substitute a new principle for that of divine rights of the sovereign, in keeping with the scientific ideas that were growing up.

The World War swept away the last remnants of the monarchical State that embodied directly the ideas of divinity. The sovereign State remains, but it is striving as best it may to take unto itself the new scientific ideas. The appeal is directly to efficiency. Divinity in all of its forms has been definitely discarded. Sovereignty itself is making way for a new conception, associated with the idea of efficient service. Science here emerges as the sole guide in the conduct of public as well as private affairs. Whether or not the State as we know it will be able to assume these new functions remains an open question. But of one thing we are certain, the scientific world view has triumphed.

In the course of our inquiry into the scientific interpretation of the universe we have been forced to make many rough generalisations in order to present coherently the new world view. We are aware of the facts though we do not in every instance understand their full implications. In these parlous times, standing as we are on the threshold of a new world view, when the old principles of authority have all but vanished and a new morality is in the making, no panaceas will suffice. We must strike out boldly along new paths, leave behind all old landmarks. No quarter is asked and none will be given. We must first destroy if we would fulfil.

W. K. Wallace.

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THE SCIENTIFIC WORLD VIEW

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INTRODUCTION

I

RELIGION is commonly regarded as the sole arbiter of morality. Though closely interwoven with economics and politics in the social fabric of more advanced civilisations, religion has down to our own times given form and significance to social institutions and moulded the moral code of mankind. Yet in spite of the fact that it was for so long believed that it was through religious sanctions that the first social disciplines were established, recent sociological research would tend to confirm the belief that the earliest and most rudimentary institutional forms were economic. It was upon a primitive economy—that of the food-gatherers of archaic civilisation for example—that the first social life was built. Only at a later date was a religious system devised, in the first instance to satisfy purely empirical needs, and gradually adapted to fit in with the spiritual and moral aspirations of men.

It has been suggested that the "idea of universal, steady, continued, upward progress must be given up once for all as contrary to patent facts; and it must be recognised that civilisation is an artificial product which can only thrive in certain soils." [1] Whether we accept this view or not it is evident that the firm establishment of a given religion in a community marks the culmination, not

[1] Cf. W. J. Perry, *The Children of the Sun*, pp. 127-128.

the beginning of its civilisation. The foundation of a civilisation is economic. It is only after social forms have rooted themselves firmly in the economic life of a people that political and religious life is possible.

We must be careful to distinguish here between the economic origin of a given civilisation and the Marxian hypothesis of the economic character of all social institutions. Marx, and more especially his followers who elaborated the doctrine of historical materialism, and gave us their economic interpretation of history, as will be recalled, claimed that social life shows three great economic epochs: slavery, serfdom and capitalism. We, on the other hand, while acknowledging the economic foundation of social life, aver that history shows us that religious and political institutions are normally reared upon it.

When a new economy takes shape the political as well as the religious systems previously existing inevitably decay, as they are inadequate to meet the demands of the new economic purpose. It is not claimed that these steps are clearly discernible in every instance. Nevertheless, to cite but one example, Christianity made slow headway on the decaying ruins of Roman world economy, and rose to the height of its prosperity and power when this economy had disappeared and was replaced by the feudal economy, which was peculiarly suited to the needs of the Christian world view. In the same way we may trace the decline of Christianity as the dominant factor in social life after the Renaissance, when a new economy was taking shape, which brought in its train the destruction of the feudal system and the rise of a new political system.

Thus the real cause of the rapid decline of religion in our own times is to be sought in the fact that we have entered upon a new economic era. It is the new economy

of industrial civilisation that has transformed the social life of our times. In due course new political forms will no doubt be devised, and it is not impossible that ultimately a new, all-wise master, a new Moses, Buddha, or even a new Jesus may arise. But the era of a new religion is remote. In the meantime a period of irreligion will intervene when the faith in religion will be replaced by a faith in science.

The existing religious sanctions of our moral code have grown inadequate. The time has come for us to realise the nature of the new moral world in which we live. It is not sufficient, however, to point out how the present differs from the recent past. We must seek to sketch a moral formula in keeping with the new institutions that are growing up.

It is a platitude to declare that the new economic system of industrialism is absorbing the energies and moulding the character, not only of Western civilisation, but of the world. It is not so obvious, nor so widely recognised, in how far the existing religious sanctions of morality have grown obsolete. In order to be able to deal fairly with the problem of the new society in process of formation we must boldly confront surviving prejudices, preconceived notions about matters of religion. What is the validity of the claim of religion to regulate our moral life to-day?

II

Moral maladjustment is the malady of our times. What are its causes? Chiefly the fact that we are forced to look to a worn-out religious world view and its appended moral code for spiritual guidance. There is as yet no other available, endowed with any degree of authority, insuring that security which our spiritual life craves. But this does not mean that a new moral code

cannot be framed. In fact the elements of such a code more in keeping with our social needs are already at hand. The new morality has its roots in science, not in religion.

We would not underestimate the ability of those theologians and their well-meaning followers, who in seeking to retain morality, bound in chains to religion, are proclaiming the marriage of science and religion as the happy issue out of all of our afflictions. Such a union is impossible. The religious view of life implies direct dependence on the will of some higher, superhuman power. The scientific view sees nothing but an enchained series of cause and effect, of change, free from the intervention, direct or otherwise, of any extra-mundane power. We admit there is much more to be said on both sides of the question than is contained in these two bald sentences. But here you have the gist of the matter. Religion and science are mutually exclusive terms. No union between them is possible. No clever arguments formulated either in the camp of religion or in that of science, can effect their union. The greater glory of God is not, as some would have us believe, a pragmatic hypothesis that can be incorporated in a scientific world view.

It is the insecurity of scientific knowledge, the absence of a suitable body of reference, that leads men to accept a discipline which we term religious. The idea of God acts as a sheet-anchor for our ignorance. When science becomes more secure we find that this idea has a tendency to disappear. The God who plays a vital part in the daily affairs of men is by degrees banished to another world and then disappears altogether from the scene of action. To-day the scientific view of life is fast rendering the idea of God superfluous. The belief in the intervention of the Deity in the everyday affairs of men, which has survived down to most recent times, is fast vanishing.

God is no longer the familiar companion of most men's thoughts, as he was even as recently as half a century ago. Prayer, which is the method of direct discourse between man and God, has like faith, taken a last refuge in a world where the scientific view of life has not yet permeated.

III

To proclaim the marriage of science and religion is either blasphemy or nonsense. Science has directed the attention of men to the affairs of this world here and now. It has broken down the ramparts and stormed the City of God. And what does the bold invader find? The old idea of hell with its eternal tortures and punishments, depicted so graphically by mediæval poets and prophets, has vanished. "And then there is the question of God, and it seems that He has a tendency to vanish also, with the disappearance of His celestial habitation so that I feel a touch of tenderness for departed grandeur in capitalising the pronoun." [1] This passage illustrates in how far the scientific view has been popularly accepted. A decade ago such a statement could not have been printed in a popular magazine without calling forth a storm of protest. To-day it passes unnoticed, the current opinion of the market-place.

Storm-racked, stripped of its life-giving force, little more than a land-mark along the path of civilisation stands—Religion. The question is, can we get along without it? And morality, set free from its bonds, can it go its way without religious support? On the answer we give to these questions the future of our civilisation depends.

[1] Cf. G. Bradford, "Darwin the Destroyer," *Harper's Monthly Magazine*, September, 1926.

The social order is a human product, man-made for men. Banish the fears of an overwhelming, all-powerful divinity, and the human spirit will soar to heights hitherto unattained. The people may in the end seek new bonds, create for themselves a new deity. In the meantime we can expect a period of culture comparable to that of Hellenic civilisation at the height of its development. But on one condition, that the forces of ignorance do not rise up and destroy the achievements of science before they have time to entrench themselves and become the repositories of a new moral code.

"As bodies are seen greater in the mist," to paraphrase the words of Montaigne, "so God is seen greater in our ignorance." Now that the mist of ignorance is beginning to rise, and scientific security is taking the place of the fears that hitherto haunted the minds of men, the time has come to sever the chains that hold morality enslaved to religion. Our next task will be to frame a new moral code. The time for ethical reconstruction is at hand. Let us survey our new universe and seek to discover the elements needed for this purpose.

BOOK I

CHAPTER I

The Nature of Religious Institutions

I

THE first purpose of social institutions is to safeguard life. As we look down the vista of history we find spread before us a panorama of institutions that have served this purpose more or less efficiently. All show a remarkable similarity of development, a certain similarity of mechanical activity, based on what appeared at the time to be rational inferences. When in due course these inferences were shown to be false the institutions which embodied them decayed, and we discover new ones taking shape.

The decay of a given civilisation, the degradation of cultural forms takes up as much, if not more, of the scene of history than does the growth of new institutions. In fact it is difficult to affirm with any degree of certainty what are the new elements in a social organism, until it is already far along the path of development. For, whereas part of a given social mechanism is discarded, and a new and more efficient one substituted, older forms are as a rule for the time being retained, and the new grafted on to the old.

In a strict sense there are never any wholly new social institutions, but merely gradual modifications of the old, until such a time as these modifications appear in the light of history as new, though in the world of experience the continuity has remained unbroken. It is important to

bear this in mind when we are discussing the problem of the decay of religious institutions. Though we may discover on all sides signs of this decay this does not mean that religion is no longer a force in the world to-day. Just as a dead tooth may be firmly fixed in the jaw and perform a function to all appearances similar to a living one, it is none the less dead, so it is to-day with the institutions clustered under the shadow of religion.

II

Of all the forms of conservatism the religious is the most difficult to overcome. It is so deeply rooted in the traditional reactions of the individual that even when in full decay religious habits retain their hold, in spite of the fact that existing religious institutions no longer offer adequate nurture for the devotional cravings of the age.

History shows us that before a new religion comes to be widely accepted, an atmosphere of religiosity permeates the fabric of society. Religion, from being a private affair, takes on a social significance. Spiritual life centres about questions of the incarnation of God on earth. We find that the spread of religiosity is in the main due to despair in regard to the affairs of this life. This gradually leads to an other-worldly way of thinking, and substitutes the potential values of a life to come for the realities of a life here and now.

If we look to the origins of Christianity as a social institution we shall find that it was not until the 3rd century after Christ that the Christians organised themselves as a body capable of playing a part in social life. In the meantime the soil had been prepared for the acceptance of religion as the dominant social factor.

The old economic structure of the Roman world was breaking down. The political fabric was honeycombed

with corruption. It is not surprising that the thoughts of men should have turned from the affairs of this world, from the oppression and persecution of the civil authorities, to the gospel of love and consolation offered by Christian doctrine.

It is an error to assume, as is so often done, that Christianity was responsible for the downfall of ancient civilisation. It is not that Christianity turned the thoughts of men away from the business of living that is important in this connection, but rather that the decay of the economic life of the Empire, the relapse of the Roman world to a more primitive economic level—in truth a new economy—was subsequently followed by the rise of a new religion as the preponderant business of social life in the West.

The actual triumph of Christianity, the reconciliation that was effected in the reign of Constantine between the Church and the State, meant for the time being the stabilisation of secular authority, but in the end the Church prevailed, and religion became the dominant influence in the affairs of men.

III

It was St. Augustine who, in the 5th century of the Christian era, outlined in detail the religious code of life. In picturing the Kingdom of Heaven, and assigning to man his fixed place there, even while he was still a dweller upon earth, St. Augustine fashioned the mould which society in the West adhered to for the next thousand years. It is well to recall that St. Augustine did not teach that earthly affairs were wholly without value in themselves, but rather that they must be so considered in comparison with the divine values which acceptance of the Christian faith insures.

From the 5th to the 15th century religion played the predominating part in public as well as private life. The divine Will, made known to men by revelation, was the cornerstone of the social edifice. Morality was governed by divine sanction, and was deemed fixed for all time, the direct expression of the will of God as interpreted by Christ's vicar on earth, the Pope.

In due course the Papacy assumed the temporal as well as the spiritual overlordship of the Western world. Theology became the queen of the sciences. As a result science as we know it to-day could not exist, as authority was the sole court of appeal. "Who will venture," Calvin asked, "to place the authority of Copernicus above that of the Holy Spirit?"

Such was the golden age of Christianity. Religious dogma was adequate to meet all of the demands placed upon it by the human spirit. Its moral principles were accepted without question as acts of faith. Its value was both social and personal; the highest, the only value offered.

Politics and economics were for the time being left out of account, bereft of all social significance. Morality entrenched itself firmly behind the ramparts of the Decalogue, as improved or modified by the Church Fathers. The ritual of the Church was adequate to meet all social requirements, to fill all spiritual needs. It offered moral security in return for unquestioning obedience. The laws and ordinances of the Church were embodied in a sacred code that it was impious to question and damnable to doubt.

IV

Religious institutions draw their strength from the uncompromising manner in which they are able to set

down and tabulate what is "right" and "wrong." The word of God is the only required sanction. Anything and everything can be declared right or wrong, merely by branding it so in the name of the Deity. Any act can be proclaimed morally wrong by calling it a "sin."

The problem of good and evil resolves itself into one of knowledge and ignorance. But knowledge in a religious sense has no relation to objective truth as scientifically understood, but has reference solely to the mandates of the Deity. It is liturgical, not literal, truth. Religious truth takes refuge in what science calls the unknown. Religion would have us believe that it is, and will forever remain, unknown, except in so far as revealed by the grace of God.

It is not the place here to discuss in any detail the problem of God, and the varying fortunes of the theistic idea. There is little interest to-day in the three old arguments advanced as a proof of the reality of God—the cosmological, the teleological and the ontological: that God exists because the world exists and must therefore have a creator; that the idea of God existing, there must be a Deity to fill the rôle; and lastly that the world offers so many manifest proofs of purpose that this purpose can only be explained as the expression of a divine will.

When the realm of the unknown comes to be explored, such explanations become unnecessary. With the retreating waters of ignorance, new landmarks of science stand forth, which serve as safe guides through the maze of the outer world which is not directly open to our senses. More recently the idea of God has sought a haven amid a new set of values. God, no longer the anthropomorphic deity endowed with a body, mind and will, patterned on the human model, becomes the idealisation of such abstract concepts as love, justice, power, and lastly of personality.

When we have reached this stage when the religious imagination withdraws from the world of reality and is forced to be content with such idealisation, religion becomes a branch of ethics or even of æsthetics, a sister to poetry, and except for specialists, the pastime of idle hours, of no immediate concern to the business of life.

V

When we recall the course of events since the Reformation we discover that not only was the religious mould of civilisation broken, not only was politics emancipated from its bondage to theology so that secular institutions were able to develop freely, but the cause of this transformation is to be sought in the new economy and the scientific world view. The growth of the new world view was slow and arduous, long hidden beneath a mass of other events. Nevertheless it gained in strength and vigour until finally to-day we may see it in full development, directing and controlling, unhampered and unrestrained, our social destiny.

If after the Reformation religion ceased to be a matter of public concern, it remained vital in the private thought and conduct of men. The religious teachings of a thousand years that had erected all the recognised social institutions with a view to safeguarding the preeminence of the Church, were not to be overthrown in a day. Nevertheless we see breaking through the mediæval spirit the first faint glimmerings of that scientific ardour which was to transform social life, and usher in a new world view.

It is less than three centuries ago—1633 to be exact—that Galileo was forced by the Church, under pain of death and eternal damnation, to recant the scientific truth that he had discovered that the earth moved around the

sun. The new scientific spirit was not to be downed by this incident. Though still bound by religious restraints, science was forging the weapons of its own liberation. A new civilisation was in the making; a new economy was taking shape that in time was to replace the religious sanctions of social life. The view that social institutions are the outward expression of a divine spiritual ordering, was about to make way for the doctrine of social solidarity, and a secular interpretation of social institutions.

In the meantime religion abdicated, in the first instance to politics. Out of the ruins of the decaying Church universal, secular states arose that robbed the Church of much of its majesty and splendour. Religion remained, as we have seen, the repository of private morality. The new political states, after creating a moral code for their own use, took every advantage possible of the authority and prestige of the Church, as props for their own growing power, until such a time as the State assumed for itself the rôle of the "immortal God."

We have now reached the 19th century. By slow stages the scientific view of life was making headway. The idea that the Bible is to be regarded as a scientific text was being discarded. Astronomy was freed from the bondage of the supernatural by Newton. Geology takes its place among the sciences when the cataclysmal theory which taught that God, experimenting as a world builder, and dissatisfied with his handiwork, had from age to age destroyed it and begun anew, was abandoned. Then came Darwin's epoch-making doctrine of organic evolution. The supernatural explanation of the origin of human life becomes superfluous when natural selection is substituted for divine, six-day creation. The fiat of God is no longer needed to vouch for the world.

It is not surprising that to some literal-minded church-

men of the late 19th and early 20th century, the doctrine of evolution should have been regarded as the invention of the devil "to get rid of God." Darwin himself, in the closing paragraph of his *Origin of Species,* had written, "There is grandeur in this view of life with its several powers having been originally breathed by the Creator into a few forms, or into one, and that whilst this planet has gone cycling on according to the fixed law of gravity, from so simple a beginning endless forms, most beautiful and wonderful, have been and are being evolved." Here we find set forth regrets that the old conceptions must be given up, and even a vague desire is expressed that an attempt be made to harmonise the new scientific view with the older religious belief.

VI

Whatever doubts and uncertainties may have arisen as to the validity of the scientific hypothesis there was no question but that the religious explanations had to be abandoned. For a time it appeared as though the scientific world view was destined to achieve an easy triumph. Vistas of infinite scientific progress were opened. The mechanical results of applied science made man the apparent master of his destiny.

In the exultation of the moment the tenacious power of religion to survive was forgotten. Had not Erasmus in the early 16th century declared that the old religion would not survive fifty years? Did not Voltaire in the 18th century believe that among intelligent persons accepted religion was extinct? And we in the second quarter of the 20th century may see evidence on all sides that science has replaced religion as the cultural focus of our times, but who would be so bold as to declare that religion will not survive in a formal way

at least for a prolonged period? The battle is not over. Religious leaders are gathering their forces for one last attempt to regain control of morality, even at the cost of wrecking the new, half-built social edifice. We are to-day in the throes of this conflict. The moral unrest of our times is directly traceable to the appeal made by the forces of orthodox religion to face the enemy, not *sin* but *science*. What will be the outcome? This is the problem we are here concerned with. Upon the solution you have to offer the fate of the new civilisation depends.

Shall we once again witness the decline of a civilisation such as has taken place so often in history? Will European civilisation take its historical place beside those of Egypt and Chaldea, Persia, Phœnicia, Greece and Rome? Are we prepared to write *finis* at the bottom of the page of Western cultural history? Will the forces of degeneration and decay triumph over those of development?

On the surface it would seem as though degeneration had won in advance. The signs of a Dark Age, stretching on before us, are not wanting. None are more full of sinister import than the mediocrity of present-day social life, its low level of pleasurable pursuits, the premium put on emotionalism, the sterility of the imaginative arts and the discredit of reason.

But on the other hand there are hopeful, though less obvious signs that we are on the threshold of a new and greater epoch of achievement. Great artistic ability may be rare, but high organising talent in industry abounds. The creative genius of the poet or the seer may be conspicuous by its absence, but the efficiency of the industrial executive has never been equalled in the history of the world. Never before has productive power been so coordinated and directed to give concrete results as

through the application of the methods of science to everyday needs.

If we will but look at it in the right light we shall see that the new economy, which is the predominant social activity of our epoch, is growing in power and strength. We are forging a new civilisation that will find its sanctions in a scientific world view. The process of readjustment is necessarily arduous. It is the more so as many still feel an inner compulsion to seek to compromise, and trim their social boat to fit the needs of the inherited, though to-day recognised as inadequate, religious view of life.

Religion cannot live without authority, uniformity of belief, absolute and perfect truth, and above all words, dogmas, creeds, the word of God, that is God in the true religious sense. Or is it that God is in a fair way of becoming the emergent Deity for which science in future ages may make room, not at the beginning but at the end of all things; not the cause of miracles, but the effect of morality? If so then first a new moral code must be devised. It will not be a religious, but a scientific code. It will not deal with "shall" and "shall not," but with "can" and "can not."

It is in the nature of a great adventure, this seeking to formulate a new moral code. We must go prospecting, across the fields of science and of history, of psychology, sociology, and industrialism. We must take stock of the world as it exists to-day in its outer reality, and our inner consciousness. Above all we must try to formulate a clear idea of what the new scientific world view is all about, what its heritage, what its promise. We must seek to disentangle our spiritual life from its religious implications and set it free to join with science in quest of a new morality, a new holiness. The outcome will serve to

clear the ground for the foundations of a new belief. As has been wisely remarked, "Our final belief is that part or that modification of our original one that has managed to survive criticism." [1]

[1] Cf. C. D. Broad, *Scientific Thought*, p. 4.

CHAPTER II

Religion and Civilisation

I

RELIGION in its highest development concerns itself primarily with the universal. It leaves to one side considerations of individual or national morality. Its ethic is that of a universe, wrapped round by the embrace of God. The religious spirit is cosmopolitan, and if unrestrained by any powerful, secular considerations, in the later stage of its evolution accepts willingly the widest divergence of race and culture within its fold.

Though Christianity broke down the narrow Judaic conception of a chosen people, and in theory made Jesus the possession of all men of all time, in practice this universality was never fully realised, as it was in the case of the religion founded by Mohammed. It is significant that this most recent of all religions to assume world proportions, should have been able to carry out in practice far more completely than Christianity ever was able to, the favorite Christian doctrine of the brotherhood of man.

The Moslem religion has gathered within its embrace the most heterogeneous mass of men ever assembled in one cause. The universal character of Christianity appears in practice very fragmentary by comparison. For Mohammedanism not only broke through caste and class distinctions, and destroyed all barriers that existed between man and man, but alone was able to realise a true equality, outward appearances to the contrary notwith-

standing. "Islam has so much to offer to the children of man that it cannot fail to win them—so much more than any form of Christianity or European progress. The Christian missionary makes his way slowly in Africa. He has no true brotherhood to offer to the negro, except in another life. . . . What Christian missionary takes a negress to wife, or sits with a negro wholly as an equal at meat? . . . The Mohammedan missionary from Morocco meanwhile stands on a different footing. He says to the negro, 'Come and sit beside me. Give me your daughter, take mine! All who pronounce the formula of Islam are equal in this world and in the next.' " [1] In principle this is the Christian ideal which the Mohammedans have put into practice.

The doctrine of the brotherhood of man in this life, in preparation for a life of eternal bliss to come, though preached from thousands upon thousands of Christian pulpits for nearly twenty centuries, fell for the most part on deaf ears. We may be grateful for it. Had it been heeded the price to civilisation would have been too great. The richness and variety of Western civilisation, its slow cultural maturity and final culmination in a scientific world view, would in all probability never have been realised.

II

Christianity was over six centuries old when Mohammed made his hegira to Mecca and founded the religion of Islam. The Western, the Christian world was still at the time in the throes of semi-barbarous ignorance. The Dark Ages had far from run their course. Christianity had established itself firmly, but European civilisation was at its lowest ebb. Then in the East a new religion arose and mounted rapidly to its zenith. With prodi-

[1] Cf. Sir Wilfrid Blunt, *The Future of Islam.*

gious speed, from conquest to conquest under the banner of the crescent, Mohammedanism spread from Western Asia to the Pillars of Hercules, crossed into Europe and conquered the greater part of Spain.

Overnight in the Arab world a new civilisation flowered. Under the impetus of the religious unity attained so rapidly, universities sprang up, the centres of culture from which radiated the arts and sciences. The mosque that admitted all believers, without distinction of race, colour, caste or class became a thing of beauty. The libraries, the studios that clustered about it, became the seats of new knowledge for the enlightenment of mankind.

Then almost as rapidly as it had been kindled, the cultural light of Islam went out. The brilliant Moslem civilisation was struck by a blight. To-day Mohammedanism still spreads among backward peoples, but it has long since lost all cultural significance.

Though the Moslem world has remained deeply steeped in religious practice, and until very recently has made no attempts to cast off the bonds of religion, with the spread of the new scientific economy here also religion as the guiding principle of social life is on the wane.[1]

III

From the outset the Christian doctrine of the universal brotherhood of man, and its non-political morality, summed up in the words, "Render unto Cæsar the things that are Cæsar's," met with strong opposition. In the

[1] It is interesting in this connection to read the following report, printed in *The Times,* of April 7, 1927, from a correspondent at Constantinople: "One goes into a Mosque to find it almost empty even in Ramazan. Two poor, old men chant under the dome of the Suleimaniek where the ranked crowds used to 'do the Namaz' in the disciplined unison that never failed to impress. Even the evening prayers on the 'Night of Power' attract thin congregations. Government discountenances Islam, and the Turks follow the government's lead."

Græco-Roman world the existing moral code and the implicit allegiance demanded by the state, were based on an ethical doctrine of exclusive egoism and national patriotism.

The religion of Greece, as that of Rome, in spite of the countless gods and worships introduced from abroad, among which Christianity was for a long period but one, was in the last analysis a patriotic reverence for the glory of the State. The fact that Christianity would not bend to this morality, but demanded an uncompromising allegiance to Christ, marked it off from all the other religions that had invaded the Roman Empire.

Christianity during this early period would have nothing to do with the morality it found ready-made at Rome, which was based on superstitious fancy and the seductive charms of sacred festivals, that made an individual and national appeal. This explains to us in a measure the tenacity which paganism showed, in surviving long after Christian doctrine had spread across the Roman world. Unlike Islam that counted its victories won almost overnight, four centuries after Christ many of the old pagan rites still survived. Whatever culture there was to be found at this time, flourished under pagan, not Christian tutelage.

The 16th book of the Theodosian code contains a long list of edicts against the practices of paganism, and though in 392 A.D. a law was passed prohibiting the older religious rites, the spirit and even the practice of pagan cults survived. It was not until Christianity finally came to terms with paganism that its cultural triumph was assured.

"Long after the external rites of heathenism had been suppressed, the pagan tone and spirit retained its hold over men's imaginations. The inscriptions of the 4th

century reveal the enduring power of Syrian and Egyptian worship. They cultivated ecstatic devotion and gave relief to remorse for sin. They had their mystic brotherhoods and guilds with an initiatory baptismal rite. They had their rules and periods of fasting and abstinence from all the pleasures of sense. They had a priesthood set apart from the world with the tonsure and a peculiar habit. The baptism of blood was the crowning rite of the later paganism, relieving the guilty conscience, and regarded as a new birth." [1]

IV

Christianity was not the only religious alternative offered to the Romans, disillusionised by, and dissatisfied with, worldly pursuits. The worship of Isis and Mithra, the doctrines of Neo-Platonism competed not unsuccessfully for a prolonged period with Christianity for supremacy. In the end Christianity triumphed, but only at the cost of compromise. It was compelled to cast overboard all superfluous doctrine inherited from primitive Christianity. It incorporated in its ritual and creed some of the most popular elements of the pagan cults. The worship of Isis, with its priests, its baptismal rites, its matins and vespers; the cult of Mithra, with its impressive ceremonial of the Taurobolium, celebrated on December 25th, were called upon to furnish ideas for popularising the Christian ritual. In addition Christianity offered to a distracted mankind a precise and definite code of moral discipline that carried with it the unqualified guarantee of salvation and a life of eternal happiness in a world to come. Mr. Mecklin cogently observes, "The one great

[1] Cf. Samuel Dill, *Roman Society in the Last Century of the Western Empire.*

asset of Christianity, not enjoyed by the rival mystery cults was the compelling power of a great religious personality. There never was a Mithra, and he never slew the mystic sacramental bull. There never was a Great Mother of Sorrows to wail over Attis and to become a true mother to the sorrowing daughters of humanity. . . . The Logos of the Stoics was a pure abstraction. . . . But the Jesus of the Gospels really lived . . . a real man and a rare religious genius." [1]

The conception of a suffering, dying and risen God was in no wise strange or unfamiliar to the Roman world. It was to be found in the myths associated with Tamnuz, Osiris and Dionysus. To this conception Christianity added the Pauline doctrine of the triumph of the spirit over the flesh, of life everlasting as the natural, inalienable spiritual heritage of every Christian believer.

In the breakup of the Empire, the moral discipline, the rigid dogmatism, the certainty and security of the Christian creed, offered a safe haven of refuge, amid the wavering doubt, the uncertainty and insecurity that prevailed. The Roman world of the 4th century was awakening to a realisation of the social transformation that was taking place much as we ourselves are to-day to a similar change. In the declining civilisation of Rome, Christianity played a definite, cultural rôle, not unlike the rôle that is being played by science in modern times, in accelerating the process of decay of the older cultural tradition.

Yet in spite of the portents of change, in spite of the fact that Christianity was delivering blows from which the Græco-Roman civilisation was not destined to recover, the close of the 4th century and the opening of the

[1] Cf. J. M. Mecklin, *The Survival Value of Christianity*, p. 194.

5th were a kind of Indian summer of paganism, much as the latter 19th and early 20th century are of Christianity. The Roman Empire seemed for a time to have gathered new strength. Men seemed confident in the permanence of the culture of paganism, and were apparently unconscious of the great changes that were about to take place.

In the 4th century Hellenism was synonymous with hatred of Christianity, just as in the 19th Christianity was synonymous with antagonism towards science. But a century later the Church Fathers were able to dictate their terms to the pagan world state.

V

It has been a favorite pastime of historical writers of recent years to discover similarities between conditions as they existed during the last century of the Western Empire and our own times. Outwardly there are elements which lead us to accept the striking parallel that may be drawn.

One of the most recent of such attempts paints for us a skilful picture. "The evolution of the ancient world has a lesson and a warning for us. Our civilisation will not last unless it be a civilisation, not of one class but of the masses. The oriental civilisations were more stable and lasting than the Græco-Roman because chiefly based on religion, they were nearer the masses. Another lesson is that violent attempts at levelling have never helped to uplift the masses. They have destroyed the upper classes and resulted in accelerating the process of barbarisation. But the ultimate problem remains like a ghost ever present and unlaid. Is it possible to extend a higher civilisation to the lower classes without debasing its standard and diluting its quality to the vanishing point? Is

not every civilisation bound to decay as soon as it begins to penetrate the masses?" [1]

The warning is well intended. But there is this one fundamental difference that must not be overlooked. We acknowledge that a given civilisation may decay owing to the absorption of the upper classes by the lower—in other words that democracy is an unmistakable "symptom of the dissolution of a given social form." [2] But to-day the question of democracy in religion does not arise. The last great historical religion, Islam, is of necessity, if our contention be true, the most democratic. In the light of events religion as a civilising power in the West is a survival. The cultural rôle of Christianity has long since spent its force. At its best it is passive; at its worst it is ready to lead the forces of reaction, to check the progress of science as the torch-bearer of the civilisation of our times.

Though the question as to whether it is possible to extend a higher civilisation to the lower classes remains open, it only does so if we look upon the social structure through the eyes of established hierarchy, bequeathed to us in the West by Pauline Christianity: of a world of God and his angels on high, Christ the Lord, the King, and the attendant secular thrones and powers. Of these science and a scientific world view takes and need take, no cognisance.

It may be relatively easy to sweep away by logical demonstration this celestial cosmogony, but the void left must somehow be filled. What is to take the place of religion? Can science be entrusted with the care of that very special spiritual heritage we call morality? Can the

[1] Cf. M. Rostovtzeff, *The Social and Economic History of the Roman Empire*, p. 487.

[2] Cf. my *Passing of Politics* (George Allen & Unwin, 1924), pp. 184 *et seq*, for a full discussion of this idea.

world as science reveals it become a channel to ecstasy, that in the past has made room for the mystic, the saint and the sinner? Will it to-morrow make room for the scientist? What place will there be for the emotionally significant, the beautiful in art and in life, if we cut off the religious outlet?

In brief can we get along without religion? Will we not lose more than we can expect to gain? Though there may be a loss, the content of life will be enriched rather than diminished, if our world view, the standards of our morality are brought into line with the cultural stage of the civilisation of our times.

VI

The passage from religion to science as the norm of social life, has already been made by the majority, though for the most part they do not realise it. If we will but look at the matter closely, unbiased by fears or prejudice, we will discover that in reality religion and the religious viewpoint are the result of an attitude of hostility towards the natural world about us.

Religion is a primitive method of adjustment to our environment, the outgrowth of an emotional, rather than a rational, approach to natural forces. It is based on a blind belief in the reality of a higher power, a God that controls human destiny. In the first place purely objective and fetichist, we may follow religious development to its highest form as manifested in Christianity, wherein its cult has become subjective and spiritualised. Beyond this stage religion cannot, as far as we now know, go.

Yet in spite of subsequent cultural development and the discovery of the world as science reveals it, the primitive framework of religion is retained unchanged. Its theology implies a universe that we know to be the fig-

ment of a fertile, but infantile imagination. The riddles of the universe remain unsolved, and more complicated than need be if we attempt to incorporate the cosmic baggage of religion in a modern world view. To seek to jettison some of our religious inheritance, or explain Christian doctrine on scientific grounds such as parthenogenesis to account for the virgin birth, or anabiosis for the resurrection, robs the Bible story of whatever mystical beauty it may possess. A thousand intelligent questions which we can now give answer to must remain unanswered as long as we confine our vision of the universe to the religious sphere. But if we would but go beyond the world of religion, if we would but enter the world that science spreads out before us, our whole attitude towards life will be changed.

The time has passed when the Christian Church served as the intellectual as well as the spiritual guide. Scientific questions are no longer settled by theology. The time is at hand when science, the accepted intellectual mentor, must assume the rôle of spiritual guide. We are fast discovering that the natural and the supernatural are but one and the same. Religion survives only so long as the duality is kept alive. Science now offers a path to a higher unity than has ever existed in the past. Its goal is not divinity, but humanity. Frederic Harrison once wrote, "The religion of man in the vast cycles that are to come will be the reverence for Humanity as supported by Nature." But to him, following Comte, humanity was endowed with the attributes of a divinity, the "Great Being," as Comte himself styled it, whereas we view humanity from an exclusively secular standpoint, the direct outgrowth of a widened social solidarity.

No matter how incomplete the scientific explanation may still appear to be, no matter whether or not a new

emergent quality, different from its component elements remains as an unexplained residue, yet we are on the right track when we look to the natural and not to the supernatural origin of all things. Science has consigned the supernatural to the realm of limbo, and what is even more important, the time has come to invert Goethe's dictum, that primitive religion embodies "fear without reverence." Science would teach "reverence without fear."

CHAPTER III

The Religious Economy

I

THE social ethics of Christianity when it reached its maturity implied a world view directly dependent upon the economic life of the Middle Ages. When this economy disappeared it entailed the inevitable decay of religion as the dominant motive of social control. Nor did the restatement of the case for religion, as attempted by the new sects that arose during the Reformation, serve to span the gulf between the religious and the secular world view. For it was not the decay of religion that was the direct cause of the social changes that took place at the close of the Middle Ages, but the transformation of economic life that forcibly displaced religion as the dominant interest of social life, and made room for the rise of the new political institutions. Religious economy was replaced by political economy.

In order to show clearly how this change was brought about it is advisable to cast a glance at the economic code of the mediæval world.

II

Little that is precise and definite is known regarding the economy of the Dark Ages. The Western world had lapsed to a low cultural level. The social organisation of the time was rudimentary in the extreme. Cities had lost all social significance. The rural districts which were

the administrative units—the counties—had no distinctive organisation. Municipal administration such as it had existed in the days of the Roman Empire had all but disappeared. Justice was administered by counts and kings who travelled from place to place within their domains as occasion required. Agriculture was almost the sole productive occupation. Petty warfare between nobles was the order of the day. Wealth was to be acquired by pillage and plunder. Whatever culture may have survived was to be found among the monastic orders.

In the 10th century we may trace the reawakening of urban life. The castles of the more powerful nobles, places of refuge for the peasantry of the surrounding territory in case of war, became centres of administration. The counts no longer travelled from place to place, administering justice and levying taxes, but took up their permanent residence in the fortified towns that grew up about their castles. As yet these towns produced nothing. They were merely centres of administration and a market for the exchange of goods.

By degrees, as public security increased, commerce and industry once more began to revive. The walled towns became *emporiums,* that is places where merchandise could be safely stored and where goods in transit had to pass. The great cities of the mediæval age owed their rise chiefly to the strategic positions they occupied along the more important trade-routes. These cities now became, not only marts of trade, but centres of social activity and cultural development where the new civilisation of the Middle Ages was to flourish.

Such are in briefest outline some of the aspects of the social environment in which Christianity grew up. In this society religion played the chief part. The Church of Rome established its hierarchy, affirmed its authority, and

commanded the obedience and allegiance of a motley mass of peoples who spoke different languages, lived under different conditions, in different climates, and showed the greatest diversity both of racial as well as cultural traditions. Christianity was the one great unifying bond between men who were split up into an infinite number of autonomous groupings, continuously at war with one another, to whom the manor house or its equivalent was the boundary of the known world, and who, outside of it, had no idea of social restraint, humanity or justice.

It is not surprising that under such circumstances the Church which had achieved a vaster and loftier world view, should in addition to its more immediate spiritual task as shepherd of souls, have arrogated to itself supreme power in secular matters as well. The princes of the Church competed openly with lay princes for authority. Some of the episcopal cities became in time great commercial centres, whose wealth and influence aroused the cupidity of the great nobles.

With the awakening of a new sense of the political dignity of the state, a conflict between the religious and the temporal powers was inevitable. We are now on the eve of the struggles between the Church and the growing political state, between the Popes and the Emperors which fill so many pages of the history of the Middle Ages. The underlying motive of this struggle, though still buried deep beneath the surface, was the new political economy, that was seeking to emancipate itself from religious control.

The middle classes that had won for themselves a place of importance in the cities, and whose commercial activities had led to prosperity and power, were beginning to feel themselves cramped and restricted within the iron circle of the existing religious economy.

III

The mediæval economic world was a closed system. When the Church of Rome undertook the task of bringing order out of the chaos of the Dark Ages, it was natural that it should take for its pattern the only known economic system, that of classical antiquity. The social programme of Plato was in the main accepted and modified by the Church Fathers, in accordance with the needs of Christianity. Social life was held to be static, and bound by the real and intimate relationship that existed between man and God, which perfect in itself, excluded all idea of progress or change. Not only were economic interests subordinated to the real business of life, which was preparation for a life in the world to come, but all economic activities as such were held suspect. According to the mediæval doctrine, "Labour is necessary and honourable, but perilous to the soul; finance is at best sordid, at worst, disreputable . . . the unpardonable sin is that of the speculator or middleman, who snatches private gain by the exploitation of public necessities." [1]

In short, economic pursuits were subservient to religious needs. Economics, like politics, was still a branch of theology. The main business of life was not, as it became in a later age, the saving of money, but the saving of souls. The highest class in the Christian hierarchy, the monastic orders, had, in following the Platonic tradition, abolished private property. This was not done to impose a penance upon those who joined Holy Orders, but on the contrary to free them from the responsibilities and burdens which the owning of property entailed, and thus enable them to give their whole attention to the business of the salvation of their souls. In the economic system perfected during the Middle Ages, the highest, not

[1] Cf. R. H. Tawney, *Religion and the Rise of Capitalism*, p. 36.

the lowest class, put into practice a form of socialism. The making and saving of money was given over to the social outcasts of the age—the Jews.

The whole of the earlier Middle Ages is permeated by a spirit of detachment towards wealth as an end in itself. The Hellenic ideal of moderation in economic pursuits was revived. On every side the Christian moral code raised whatever barriers it could find in the way of the private acquisition of wealth. It condemned the pursuit of wealth as immoral, and used the whole power of its divinely sanctioned authority to keep in leash the cupidity, greed and cunning of those who sought to evade its commands. We are not here immediately concerned with the motives of this policy. It has been suggested that its true purpose was to reserve for the Church the larger portion of the good things of this life, and that the Church needed ample funds in an age when funds were not ample, to keep up the ceremonial of its ritual, as well as provide fat livings for the clergy.

The Church was still the centre of civic affection. It had become personified in the minds of men, and occupied the place in social life taken later by the State. It was the sole source of a higher law that transcended local custom, and could override the judgments handed down by secular authority.

Catholicism had been able to build up a vast institution efficiently organised, with ramifications throughout the Western world under the immediate and direct control of Rome. Is it to be wondered at that the Church felt entitled to hold the purse strings, and take for itself the larger share? Under religious economy the spiritual values offered by Christianity far outshone the material rewards that could be won through ordinary business. Divine Providence, which determined all things, made

some rich and others poor. The better way to happiness was through the narrow portals of the Church rather than along the broad path of worldly wealth, beset with temptation and sin. How could it well be otherwise as long as it was believed that "the basest and most corrupt clerk in virtue of his order, stands high above the most eminent and virtuous layman, as gold is above iron, or spirit is above the body"?

The accumulation of wealth, the possession of a large fortune was of value in so far as it permitted the owner thereof to purchase a place in heaven. For the poor and lowly salvation was guaranteed by their very condition of misery and poverty on earth. Thus, in the economy of the Middle Ages, an accommodation was reached, satisfactory to all as long as salvation remained uppermost in the thoughts of men. Did not "St. Francis of Assisi and St. Catherine of Siena suck the ulcers of the lepers . . . and the glorious King, St. Louis, nurse the sick, kneeling and bare-headed. . . . It was the extraordinary practice of this saintly monarch to wait at table on the poorest and most abject of his subjects, and eat the leftovers of their soup." [1]

IV

Under the circumstances it is not surprising that men should have turned to the Church for direct guidance in economic questions. Nor was the Church at loss to offer the necessary advice. It is significant that St. Thomas treats of private property in connection with his analysis of theft and sin. The owner of such property is regarded as an administrator who must give a strict accounting of his stewardship. He is called "the dispenser of the

[1] Cf. St. Francis de Sales, *Treatise on the Love of God,* Bk. VI, Chap. X.

treasure of the poor." In extreme cases the poor man is justified in committing theft in order to satisfy a "personal, pressing and urgent need," in taking from "the superfluous store of another."

Christian economics had sought to eliminate from the idea of property the Roman doctrine of absolute rights. In the eyes of the Church such an egotistical interpretation of property rights conflicted with the divine purpose, which found expression in maintaining intact the idea that property is first and foremost a social, and only secondarily an individual value.

The social solidarity of the Middle Ages required that no man should by the mere fact of the ownership of property be able to raise himself above his fellow men. In a society that was in principle fixed and immobile, nothing could be more disruptive than the sudden acquisition of a private fortune which would upset the nice balance of a carefully hierarchised social life. At a time when each and every one had his allotted place in the scheme of things, the acquisition of undue wealth was inevitably looked upon as subversive to law and order. As long as the means of wealth were few, as long as economic activity was held in check by natural conditions, it was not difficult to enforce these ideas. But when public security increased and wealth became more abundant, when the accumulation of a fortune became the principal pursuit of the enterprising Middle Class as a pathway to political power, the old religious economy was doomed.

V

The economic code of the mediæval age placed agriculture at the top of the list of honourable pursuits. The Church had attained its position of supremacy in a rural society. In a strict sense land was the only sanctioned

type of property. All of the occupations connected with the soil were held in highest esteem. The tiller of the soil, though compelled to work hard, nevertheless had ample leisure to devote to the needs of his soul's salvation.

At the bottom of their scale the scholastic economists placed money-making, *lucrum ad infinitum,* which takes up all of a man's time, harasses the soul and is therefore immoral in itself and in its effects upon all. In keeping with this idea, it was decreed that only a just price is to be charged for goods, a price that will permit the producer to live decently according to his station; but never so high as to permit him to grow wealthy, nor above all—and this point is strongly emphasised—transform the purchaser into a debtor.

The scholastic theory of work and wages shows a marked advance over the classical ideal. In the past, work in general, and manual labour in particular, had been considered degrading. Under the religious economic code all work of whatever nature, even manual labour, was endowed with especial dignity, prescribed by God as an expression of moral worth. It was therefore a cardinal tenet that every man should receive a just wage. Various authors of the time, in dealing with economic problems, offer interesting suggestions as to the best means of determining a fair wage scale, taking into account the nature of the work, the amount of intelligence required to perform it, the risk involved. In many such a passage the mediæval economists touched upon problems that confront us to-day. There is a measure of truth in the suggestion that, "The true descendant of the doctrines of Aquinas is the labour theory of value. The last of the schoolmen was Karl Marx." [1]

But the scholastic economists were first and foremost

[1] Cf. R. H. Tawney, *op. cit.,* p. 36.

moralists. They were from the beginning suspicious of economic motives. As all earthly institutions were regarded as patterned on a divine model, questions of right and wrong took precedence over those of profit and loss. Here we touch upon the weakest link in the chain of religious economy. As long as economic interests were held to be in their essence degrading, and economic laws were made to conform to the tenets of the Church no way was to be found to reconcile the idea of pecuniary gain as an end in itself, with the accepted religious moral code that looked to salvation as the only pursuit in life.

It is when we come to the question of *interest* in its financial aspects—usury,[1] as it was called—that the real nature of the religious economic system is revealed. The idea that interest on capital is immoral and beneath contempt permeates the mediæval economy. The origin of the idea is to be sought in the Bible. The words of St. Luke, "lend, hoping for nothing again, and your reward shall be great," were interpreted literally. When during the 12th century economic prosperity was spreading across Europe the need to reinforce the Christian principles of charity by legal measures became urgent.

The Canon Law built up a body of prohibitions which were to serve to check the growth of usurious practices, as they were then understood. The whole argument rested on the belief that money is of itself sterile, and can produce nothing of value; that whatever is produced of higher value than the money originally borrowed, is due to the skill of the borrower, and that the lender is entitled to no share thereof. Subtle distinctions were drawn between the various types of property, and it was argued that as the use of a thing cannot be separated from the

[1] Usury, as the word was used in the Middle Ages, *usura*, did not signify usury in the modern sense, but interest of any sort, no matter how low the rate.

thing sold, as you cannot make a man pay for the use of wine by more wine than he has consumed, you should not make a man pay for the use of money, more money than originally borrowed. The underlying idea was, of course, that of the social nature of all goods, and not least among these, of money itself, of which the individual owner was, as we have pointed out, looked upon as nothing more than the steward.

VI

The Christian standard of economic conduct sought to enforce a sacramental view of all business transactions. There seemed to be no way out of the vicious circle. "He who takes usury goes to Hell," a mediæval exponent of the Canon Law is reported to have declared, "and he who does not, goes to the work-house." Thus in spite of the fact that in theory economic pursuits were regarded with obloquy, after the 13th century everything at Rome was for sale. The abuses of simony and the peddling of indulgences became the crying evils of the Church during the closing Middle Ages. St. Thomas himself was obliged to admit in discussing the vexed question of usury, "The law cannot prohibit all sins, owing to the imperfections of mankind," and the sin of lending money at interest, often at a very high rate of interest, flourished. Money-lending had been in the hands of the Jews and the Lombard bankers who openly disregarded the edicts of the Church. Then towards the end of the 14th century the Church established its own money-lending system, the *"monte di pietà,"* or official pawnbroking offices, ostensibly to protect the poor from the sharp practices of the Jews.

Once the gates were thrown open there was no stopping halfway. The religious economy had placed a ban

on the pursuit of wealth, had sought to hold in check the natural greed of men, who, left to their own devices, and disregarding their religious duties, would have concentrated their full energy on money-making. When at the close of the Middle Ages commerce and industry entered upon a period of great expansion, a plutocracy grew up, and the possession of money became the symbol of power, not merely for the individual, but for the state.

The economic revolution that ushered in the Renaissance turned the minds of men away from the precepts of scholastic economy. A worldly way of thinking was displacing the religious world view. Economics, no longer a matter to be judged by the standards of religion, became a question of politics. The new national states then in process of consolidation, in their eagerness to overthrow the power of the Church, seized upon any and every argument that might be used against Rome. Among these none was more potent than that of the need of recognising the strictly secular nature of all economic pursuits, the affirmation of the widest property rights of the individual; the freeing of all economic questions from religious control and placing them under the jurisdiction of the civil authorities.

A period of wild and feverish speculation marked the closing stage of the mediæval economy. The Church could not hold itself aloof. It required funds for the maintenance of its vast and varied institutions. But it was compelled to shoulder all of the blame as it could not cast overboard the older economic code that had been the source of its enduring power.

VII

The new economy which first begins to take shape during the later years of the 14th century was des-

tined not only to disrupt the existing social system, but to make room for the new institutions that were to displace religion as the dominant interest of social life. A new financial technique was being devised. The older suspicion of commercial transactions was being overcome. The lending of money at interest was legalised. It was no longer a sin to be a speculator, but a mark of keen wit and intelligence.

As is inevitable in an age of transition the change in the centre of economic gravity was accompanied by much suffering and misery among those who were unable to take advantage of the new conditions. Here again the Church was made to bear the blame. The early Reformers who preached against the extravagance and corruption of the clergy, who it was claimed were ready to offer anything and everything for sale, were in reality attacking the new economy. They made themselves the champions of the poor, and demanded a return to the doctrines of primitive Christianity; they pamphleteered in favour of an economic code based on the Sermon on the Mount, which they declared had been distorted by Rome.

The true cause of the social crisis that led to the Reformation, is to be sought in the rise of a new economy. It is impossible to understand the historical significance of the Renaissance and the Reformation unless we view them as the reaction of enlightened minds against the tyranny of an economic code that left no room for individual growth and development.

During the Middle Ages, as the result of the economic system enforced, the individual as such did not exist. Man was conscious of himself only as the member of a group. The chain of dependence was continuous and without a break from the serf to God. The religious ideal which dominated social life, was directed towards

maintaining the spirit of mutual dependence. The emancipation of the individual from religious subjection was the first step towards a new freedom. It found expression in the growth of self-consciousness which began during the Renaissance. For the time being social restraints were cast to the winds. A thoroughgoing egoism characterized the conduct of the age.

But if Luther and other early Reformers looked upon commercial enterprise, which they identified with extortion, as a cause for fulminating against the "beast squatting on the seven hills of Rome," later leaders of the Reformation, more especially Calvin, had no difficulty in proving to their own satisfaction that business activities were consistent with the highest Christian virtues. In the meantime the new economy had had time to strike deep root. The secular world view was making rapid headway. To Luther private property was still a curse, by Calvin it was regarded as a blessing.

The social ethics of the new age took private property for granted. The Protestants still claimed the right to supervise the use of wealth, but washed their hands of the methods adopted to procure it. The older scholastic interpretation of economics that had made of it a branch of ethics, was supplanted, and the Reformation gained adherents as the champion of individualism, of economic pursuits, freed from all of the older moral restraints. *Lucrum ad infinitum* becomes the order of the day. "Compared with the financial dynasties of the Hochstetters, Haugs, Meutings, Imhofs, Fuggers," writes Tawney, "the Hapsburgs, Valois and Tudors were puppets dancing on wires held by a money power to which political struggles were irrelevant except as an opportunity for gain."

The great contribution of Protestantism is that it

served to emancipate economics from religious control, and made possible the development of the scientific world view as we see it taking shape to-day. But before this emancipation was complete, before political economy could stand on its own feet, unaided by the props of religious sanctions, a curious economic compromise was arrived at in what is known as the mercantile system, which here requires brief mention.

VIII

The mercantile system marks the triumph of plutocracy over the mediæval view of moderation in worldly wealth. It was based on the illusion that the acquisition of a vast hoard of gold or other precious metal constitutes the wealth of nations. It professed the belief that it was the first duty of the state to acquire all the gold possible; and see to it that none should leave its coffers. At the same time the state was to favour any and every plan that would increase its store of precious metals. The mercantile system was based on the maxim which during the 16th century was considered the height of economic wisdom, to use the words of Montaigne, *"nul ne gagne qu'un autre ne perde."*

Such in roughest outline are some of the salient features of the economic doctrine that replaced the religious economy after the close of the Middle Ages. It was not so much a carefully thought-out system, as a body of beliefs tinged with religious sentiments that attached a quasi-mystical, supernatural value to gold. The accumulation of wealth as an end in itself, the hoarding of gold, and the charging of interest had been severely condemned by the scholastic economists. They now become the foundation of the mercantile system. Money for money's sake is the order of the day.

During this period the modern state system was taking shape. The secular power of the Church of Rome had been broken. Temporal sovereigns had been able to emancipate themselves from religious control. In some cases, such as England and the Low Countries, they had gone so far as to sever all the ties that bound them to the Church Universal. The new national states were anxious to consolidate their power. In the breakup of the feudal system the older method of levying service-dues from vassals had vanished. Money payments replaced the services attaching to feudal tenure. The king required money to pay his servants and soldiers. He needed money to keep up the pomp and splendour of his court, the visible tokens of his absolute power. The accumulation of gold as an end in itself, which had led to the influence and power of the rich middle-class bankers, came to be looked upon as the chief purpose of the state.

A new spirit of enterprise was abroad in the world. Though still only vaguely felt rather than understood, the idea of progress was replacing the older religious view where everything was fixed beyond change. We may trace here the beginning of that scientific curiosity that was to lead men to explore the unknown, both in the actual world and in the realm of thought. They once again dared to look about them and face realities rather than remain under the cloud of religious fictions. In all branches of human enterprise a secular view was replacing a religious interpretation of events.

The trade route to the East is blocked by the fall of Constantinople into the hands of the Turks. Columbus sets forth to discover a new passage to India by sailing westward and incidentally discovers America. This discovery gave greatest impetus to the mercantile system.

Gold from the mines in Mexico and Peru raised Spain to the pinnacle of power within a generation. What gold meant to the men of the 16th century is typically expressed in the words of Columbus himself, "Gold is treasure, and he who gains possession of it has all that he needs in this world, as well as the means of rescuing souls from Purgatory, and restoring them to the enjoyment of Paradise." [1]

IX

What happened in the case of Spain is characteristic of the fallacy of the mercantile system which nevertheless dominated the economic life of Europe for more than two and a half centuries. The gold that flowed into Spain from America soon choked the channels of trade, increased prices and raised the cost of living. Conforming to the mercantile creed, the state did all in its power not only to prohibit the exportation of the precious metal, but even to attract foreign minted gold, by debasing its own currency. Then to make matters worse, when it was discovered that owing to the high prices prevalent in Spain foreign merchandise flowed in, the exportation of Spanish goods was prohibited. Instead of seeking to stimulate the industrial and agricultural development of Spain, the adherents of the mercantile principles sought merely to increase their stock of gold. The economic ruin of the country ensued, due to the mirage of gold as the basis of national wealth.

The example of what was happening in Spain did not deter other nations from pursuing a similar course. Fortunately for European economic progress Spain alone possessed gold mines overseas, so that other peoples had to turn to the industrial and commercial development of

[1] Cf. H. Pirenne, *Histoire de Belgique*, Vol. iii, p. 273.

their native resources as a means of attracting gold into their coffers.

It was not until the 18th century that the fallacies of mercantilism were made plain. In the meantime modern political economy had had time to mature. The period of religious wars and persecutions was over. Men's energies were concentrated on the accumulation of wealth, which now received the unqualified blessing of the Church and the protection of the State. Industry and commerce were no longer held in check by ethical considerations, but were taking advantage of the new knowledge offered by science, and beginning to make use of scientific methods.

The age of the industrial revolution is at hand. Political economy is about to become a science. We now hear much talk of natural law in economic matters. The supernatural elements still traceable in the mercantile system, have all but disappeared. Gold takes its place as a medium of exchange. Commerce, industry and agriculture are recognised as the true sources of the wealth of nations. The pursuit of wealth is henceforth unrestricted. It is no longer as it was in the Middle Ages subservient to the higher business of salvation, or thereafter to the higher needs of the state, but for the time being free trade is the basis of the new political economy. Freedom is the order of the day. Nature is the great miracle. Providence has been replaced by progress. Natural law takes precedence over divine law. As a French writer ingeniously puts it, "A la modestie de l'artisan du moyen âge, succède l'âpreté ingenieuse du fabricant moderne, à la vénération du travail, l'adoration du capital, à la religion du chef d'œuvre, la foi du profit." [1]

At the opening of the 18th century Mandeville

[1] Cf. M. Hennebicq, *"Genèse de l'Impèrialisme anglais,"* Ch. IV.

writes his poem, "The Fable of the Bees," in which he forecasts the new political economic principles. Man in pursuing his own best interests inevitably promotes the well-being of others. There is an innate harmony between private interests and public utility resulting from the division of labour and the free exchange of the products of such labour. No question of morality is to be raised in such matters. In fact the system may be immoral. But this is of no consequence, as according to Mandeville economic pursuits are governed by natural laws which have nothing to do with morality.

A half century later de Quesnay gives us his "Tableau Economique." Here we find the first comprehensive statement of the principles of political economy. Adam Smith writes his "Wealth of Nations," and demands full freedom in industry as the natural corollary of political freedom. The last vestiges of the religious economy have been swept aside.

CHAPTER IV

The Psychological Problem

I

In the preceding chapters we examined some of the historical aspects of religion as an institution, with more especial reference to the social rôle of Christianity in the West. We would now cast a brief glance at the psychological aspects of the religious world view.

From the standpoint of psychology religion is an emotional reaction to the universe, which sets passion above principle, intuition above knowledge, authority above experience. Though in dealing with a highly developed religion such as Christianity a definite world view is implied, this world view remains secondary to the all-important problem, which is to arrive at some means of establishing friendly relations with the all-powerful Deity, the unseen ruler of the world.

It is not the knowledge of, but the favour of, the union with, God that the religious soul craves. It is this seeking after unity, the feeling of individual dependence upon the universal, the belief that there exist somewhere, somehow occult, supernatural powers that control the destiny and fortune of men, that characterises religion and marks it off from all other disciplines. Religion creates a world of values all its own—a hazy, mysterious, mystical world over which spirits rule. Subsequently as religion develops, and becomes more precise and definite,

these spirits are replaced by spiritual values, and religious practices, ritual and dogma, a theology take the place of the direct communion of man with the unseen world about him. A divine pleader before the throne of God, a Christ who takes upon himself the burden of individual sin, removes the Deity from everyday life, though He remains close at hand to be invoked through prayer.

Religion implies, furthermore, a social bond. It unites men of a given creed to act in a certain and definite manner in regard to the Deity. It is through worship that contact with God awakens not merely a sense of duty toward, but also of right in respect to, the divine power. The more primitive the religion, the more direct and immediate the power of the individual over his God. Mere physical survival is at stake. Then a new set of values is introduced when social security allows more time to turn from the urgent problems of everyday life to the contemplation of the universe, to thoughts of redemption and resurrection, to the life everlasting, as the highest good.

Religion offers a special manner of directing one's life in accordance with the dictates of belief. The origins of such belief are to be found in faith, upon which religion raises its edifice. We shall have occasion to discuss in some detail the psychological value of faith later on.[1] Here it will suffice to note that the chief function of religious faith is to fix for all time as unchangeable the foundations of belief. "C'est la gloire de la parole divine d'être toujours semblable à elle-même." Religious faith implies fixity, certainty, security, and thus acts as a civilising force by giving to the believer a feeling of superiority over the world of sense and transience.

[1] See p. 70.

II

Religious reality, a towering edifice of the imagination, in the case of Christianity, of the Pauline imagination, offered immediate satisfaction for the inner needs of man. It catered admirably to his spiritual wants as long as these did not go beyond certain definite and fixed boundaries. For from the outset all possibility of growth or change was excluded without adopting heretical views which came to be looked upon as the most heinous sin. Turn whichever way we will, Paul's doctrine of original sin blocks the way. The struggle between God with his cohorts of angels and the devil with his crew of demons, pictured so vividly by the poets and prophets of Christianity, created and kept alive beyond possible hope of reconciliation, the inner conflict of the spirit and the flesh, the soul and body of man. The only way out was through strict adherence to the precepts of religion, a firm faith in the teachings of the Church.

It is not surprising that Christianity was compelled to adopt an intolerant attitude towards any and every innovation that might tend to undermine this doctrine. The Church offered salvation in return for allegiance and strict obedience, and as long as the cost was not too great, as long as the psychological absurdity of the idea of original sin was not too obvious, it was patiently adhered to, even by enlightened minds. The reward was immortality and a life of eternal bliss in a world to come.

Here we come upon another essential characteristic of religion which has important psychological bearings on the problem in hand. Christianity is above all else a forward-looking religion. It deals primarily in futures, in a future life. In spite of this fact it readily becomes entrenched in tradition and keeps looking back to a remote

past, to the life and times of its founder. This past becomes for the true believer a living present, which is united with the future, pictured by faith in such glowing colours. The past, the present, the future fade and make way for an eternal and ever-enduring, unchanging state of felicity which hope enkindles in the human heart, and religion boldly offers to realise for those who, to use the symbolical Christian phrasing, will but "take up the cross and follow Me." Thus there is developed within the religious mind a temporal unity, a feeling of certainty about human destiny that admits of no alternative. This temporal unity is the foundation of those spiritual values which identify religion with the *summum bonum*. This is the high achievement of Christianity.

III

The thirsting after eternal life forms one of the most curious pages of the psychological history of the Western world. A longing for personal immortality is the key to the power of Christianity. It is a characteristic of the peoples of the West and serves to explain the hold of religion over the minds of men long after cultural leadership had passed from under religious control. From the earliest times the Church made itself the guardian of the belief in immortality, the central factor of its cult. As a result it became the peculiar heritage of European peoples during the Christian era.

Prior to the advent of Christianity the idea of immortality and a future life had remained more or less in the background. The two sources from which the new religion of Christ drew its main inspiration—the Hellenic and the Judaic—had developed the idea only fragmentarily. Among the Jews the belief in another life after

death was neither widely spread nor highly prized.[1] Life itself and the successful living of it was the paramount interest for them. The things of this life were held in higher esteem than those in a possible world to come. Yet the idea of immortality became in time, if not an active part of the Jewish creed, at least implied in their cult, on the one hand as the natural result of a living faith in an eternal, active and ever-present God, on the other as a result of the vicissitudes suffered during the Babylonian captivity.

To the Greeks of the Homeric period the cult of the dead was unknown. "The Homeric picture of the shadow life of the disembodied soul," writes Rohde, "is one of resignation, not of hope." [2] The dead were held to have no power over the living, and as a result they were not worshipped. But in post-Homeric times a change took place. The "hero" becomes an object of worship. His grave becomes a shrine. A new note is now introduced into religion in Greece. The Greeks were discovering death and the world of the dead. "In so far as it is possible to speak of a Delphic theology, among its most important elements must be counted the belief in the continuation of the life of souls after death in its popular forms and in the worship of the dead." [3] In spite of a certain interest in immortality the Greeks of the high period of their civilisation were more concerned with death than with a life thereafter. The cult of the soul could not shake them from their indifference. Their approach to life was in the main scientific and not

[1] The Concordance of the Old Testament contains no direct reference to the idea of eternal life.

[2] Cf. Erwin Rohde, *Psyche: The Cult of Souls and Belief in Immortality among the Greeks.*

[3] Cf. Rohde, *op. cit.*

religious. Matters to be decided by faith rather than by evidence never enlisted a whole-hearted support among them. The Hellenic view of existence was principally concerned with death as the end of all things. To sink into nothingness became the final goal of a well-spent life.

"No people ever came upon earth so serene and sunny as the Greeks in the youthful days of their historical existence, but no people changed so completely their idea of the value of life. The Hellenism which ended in the religious speculations of neo-Pythagoreanism and neo-Platonism, viewed this world which once appeared to it so joyous and radiant, as an abode of darkness and error, and earthly existence as a period of trial which could never be too quickly traversed." [1]

IV

As a distinguished Spanish scholar has epigramatically put it, "Judaism discovered life, Hellenism discovered death, and Christianity life after death." [2]

The doctrine of immortality of the soul is the great contribution of Christianity. It is here that the psychological acumen of St. Paul reveals itself. For the Pauline dogma of resurrection and the life-everlasting as the personal prerogative of every baptised Christian, became the ground upon which the Church Universal was erected. On the empty tomb of Jesus the whole edifice of Christian theology rests. It is not that St. Paul created the idea of a belief in immortality, nor that Christianity actually "discovered life after death," but rather that through Christ a way was opened to satisfy the wide and ever-spreading longing for a future life. Paul foresaw that here was a dogma that could not fail to win con-

[1] Cf. Otto Pfleiderer, *Religionsphilosophie auf geschichtlicher Grundlage.*
[2] Cf. Miguel de Unamuno, *The Tragic Sense of Life in Men and Peoples.*

verts. Here was a creed that, expressed in a suitable ritual, would banish doubt, and fortify the faith of every believer. Here was a spiritual ideal that could be made to wear the dress of actuality.

The hunger for immortality that was spreading at the time required more solid food than was offered by the various Egyptian and Asiatic cults that had invaded the Græco-Roman world. In the agony of the ancient civilisation life had become grey, sordid and not worth the living. "A rejuvenation upon this earth seemed out of the question. All the more complete in consequence is the submission that throws itself with closed eyes and eager yearning upon another world, situated far beyond the limits of the known and the knowable. Hopes and a vague longing, a shrinking before the mysterious terrors of the unknown fill the soul. Never in the history of the ancient world is the belief in an immortal life of the soul after death a matter of such burning and exacerbated ardour." [1]

V

Such is the soil upon which the Christian doctrine of immortality fell. The Pauline idea of a life after death and eternal bliss in a world to come, advanced in the first instance to win a hearing for Christianity, became in time the one irrefragable dogma, the *credo* that was to turn the thoughts of men from the affairs of this world and fix their eyes on the City of God. It served to inculcate a contempt for the events of this life and direct men's conduct with a view to winning a home for themselves in a universe beyond the stars. The soul of man, cut loose from his body, from the world of sense, the world of beauty where Hellenic candour had so firmly

[1] Cf. Rohde, *op. cit.*

rooted it, was to seek a new home in a supersensual, supernatural universe, not in a land of mysterious shadows, but in a definitely situated and well-ordered Kingdom of Heaven. A passport, good for admission to this land of the blest, was so to speak, to be signed, sealed and delivered to every follower of Christ, together with his baptismal certificate, provided that he adhered strictly and faithfully to the laws and ordinances of the Church.

Is it to be wondered at that so many were induced to join the heavenly band? The invisible world had won the day. The peoples of the Roman Empire had, as we have noted, been fed on vague promises of immortality and a life after death. Now Christianity offered certitude in the place of surmise.

Even the upper classes among the Romans that had hitherto kept aloof from giving serious thought to questions of religion as being matters of superstitious fancy suited only to allay the fears of the common people, were ready to accept the Christian argument as plausible. This was due in a large measure to the fact that the scientific spirit that had characterised Hellenic civilisation was dead. The philosophy of the age was marked by its interest in transcendental problems. The divine no longer descends to earth; man must mount to his God and seek an abode in His world. In order to do so he must be willing to turn his back on the affairs of this world rather than do his work in it.

According to Plotinus, the soul must no longer rest in the world of created beauty. The soul of man is so profoundly conscious of its supersensual origin, of its divinity and eternity, that it must rise above all created being and reach out to the One that was before the world and remains forever outside of the world. Here was a mystical flight of fancy that Christianity transformed into

a concrete idea, and offered to mankind the means of its realisation in an everyday, matter-of-fact way, as part of the natural heritage of every true believer in Christ.

VI

Though the doctrine of immortality is absent in early Christianity and did not gain universal acceptance even within the Church for a long period, after the adoption of the Athanasian Creed the triumph of the idea of the immortality of the soul, the resurrection of the body, and life everlasting was complete. It was incorporated in the recognised dogma of the Roman Catholic Church, and became the keystone of the triumphal arch of Christianity.

Henceforth the risen Christ, the Lord of Hosts in His effulgent glory, takes the place of the historical Jesus. Christ is no longer a mere teacher of a higher and nobler morality. He becomes the dispenser of immortality, a king of kings, the ruler of the heavenly universe, who takes his seat on the right hand of God.

It is in this fashion that the mystical, subjective religious experience of Paul took shape as the cohesive element of Christianity. Once started on its path the idea was expanded and developed. It was glorified in prayer and song. It became the buoyant belief of the living; the solace of those who mourned the dead. It awakened poetic fancy, inspired the sculptor, the painter, as well as the recluse and the ascetic. But above all the idea of a Kingdom of Heaven and eternal life there, became the source of the spiritual delight and high hopes of a countless multitude whose earthly life would otherwise have been drab, sterile and without emotional outlet.

Western civilisation remains incomprehensible unless we bear in mind the vigorous, militant faith in a resur-

rection of the body and life everlasting that was for so long shared by all classes. It was ever at the front of men's minds, and went far in determining the nature and character of our social institutions. It meant the triumph of an emotional, as opposed to a rational view of life.

The spiritual atmosphere of the age was definitely affirmative. No doubts as to the truth or falsehood of the conception of immortality were allowed to raise their heads. The Church had the unqualified support of such great men as St. Augustine, St. Bernard, St. Benedict, St. Francis of Assisi, who helped to spread the gospel of emotionalism for the greater glory of God. *Credo quia est absurdum,* cried Tertullian, and his words were re-echoed through the centuries.

Life in this world was looked upon in the light of a romantic adventure; Christianity, as the great romance in which the love of God played so large a part; not love in some cold, abstract philosophical sense, but passionate, sensual love that made it possible to enjoy the good things of this life. The sins of the flesh were not clad in robes of darkness, the cause of mental anguish, nor did they imply eternal damnation, as was the case after the Protestant schism. Was not complete absolution within the power of the Church to withhold or grant as it best saw fit?

VII

The triumph of feeling over thought, of emotion over reason, interprets religious experience as the most vital factor in the psychology of the mediæval mind. Nor is it surprising that the exuberant religious faith of the age should have taken shape in the institutions of feudalism, which invented troubadours, chivalry and "courts of love." It raised woman to a very special place as the

Queen of Beauty, for whom bold knights contended in the lists. It sent men and even children, on Crusades to the Holy Land, and Sir Galahads in search of the Holy Grail.

Looked at from the rational standpoint the social life of the Middle Ages appears like a burlesque, a carnival. Not that there was not much misery and more suffering, constant wars, plagues, pestilences and famines. But in spite of this dark side of the picture there was something make-believe about everyday life, an attitude of expectancy, an atmosphere of joyous hope, of men certain of ultimate salvation in another and more real life to come.

It is only when in the 13th century we come upon the effort to rationalise Christian doctrine, when once again reason begins to raise its head, that a change is to be noted. Christianity as a living, vital force could not survive in a rational atmosphere. It may have been able to adapt its theology, explain its dogmas, interpret its creed by rational arguments, but these are but so many proofs that the era of Christianity as the dominant factor in social life was drawing to a close; that the living, burning faith upon which religion relies, was dead.

Christianity, during the high period of its achievement, offered as a free gift to mankind immortality of the soul and a life after death. It concerned itself exclusively with this offer, and cut itself adrift from all rational or even ethical considerations that might conflict with this dogma. The chief concern of the Church was with the psychological problem of how best to keep alive, beyond the peradventure of a doubt, this belief.

In the history of the ideas that have dominated the human mind none is more extraordinary than this one of a future life. It fascinates the successful and the fortunate, as it soothes and comforts those "afflicted in

mind, body and estate." God, from being a mere religious symbol, a superior being endowed with supernatural powers, who is worshipped with anxiety by the faithful, whose testy temper is placated by burnt offerings and gifts, is transformed into a giver of life—a higher, nobler, better life than that experienced in the world of reality.

St. Paul, in creating this new world view, gave body to the longings, form to the cravings, content to a personal, restless feeling of his own that he knew was shared by the great majority. He offered a doctrine of salvation through the cross, as endowed with divine authority. There was thus established a mysterious, but none the less valid relationship between man and the crucified Jesus, the living God, which made plausible the belief in a supernatural world and fortified the faith of the Christian in a life everlasting.

CHAPTER V

Social Psychology in Its Religious Aspects

I

THOUGH religion is psychologically a matter of individual concern, a phenomenon of mind, it is at the same time a factor of social psychology. Its practices become fixed in a ritual; it adopts dogmas, constructs a theology, establishes a Church where its cult may be practised, schools where its creed may be inculcated, universities where its doctrines may be developed and expounded.

In periods during which religion is the dominant, directive agency in social life, these institutions are the direct reflection of the psychological development of the community; they embody its cultural aspirations, and reveal the nature and character of the level of civilisation attained. Religion is thus not a matter of purely personal concern that fills the subjective needs of a given individual, takes care of his solitariness as some would have us believe. This stage is only reached much later when religion as a vigorous, objective social force, has spent itself. When, as is the case in religion to-day, there is so much talk of the need of reconstruction, when all of the older ideas of salvation or damnation are coming to be discredited; when we are told by religious leaders to look to our own conscience for counsel and guidance through the maze of religious doubts, it is a sign that religion no longer plays an active, social rôle and that its institutions which claim to do so have lost all social significance.

History shows us that the Church when it reached the height of its prosperity became the temporal as well as the spiritual overlord of the Western world. Its decline dates from the period when this overlordship could no longer be maintained. When as we have seen [1] feudal economy upon which the pomp, power and permanence of the Church rested, was undermined and was about to be replaced by a new economy, the magnificent social edifice of Christianity was doomed. The valiant struggle of the Church to maintain its ascendancy in the face of changing conditions, serves to confirm this verdict.

It is all the more remarkable that Christianity, though split asunder by the Reformation, after nearly all of its control over social institutions has been swept away, is still able to retain a semblance of its former spiritual authority. This is due in a large measure to the conservative, traditional element in man's make-up. It thus comes about that in spite of the advance of science, in face of the flank, and more recently, the frontal attacks that Christianity has been subject to during the past three centuries, it still is a social force to be reckoned with.

So strongly do inherited tendencies survive that men are afraid to tamper with any object that has been endowed with divine characteristics. Though we have long since accustomed ourselves to lay hands, and rough hands at that, on the divinely anointed king, the servants of the Deity and the Church itself have retained a place of especial protection.

II

An institution only remains vital as long as it fills a definite need. A man's religion is to-day only in a very

[1] See p. 40.

incidental way, the result of his personal reaction to the world about him. He no longer lives in a religiously minded community. Religion is no longer trusted as a motive of social activity. In a matter-of-fact civilisation such as our own, secular views take precedence over religious doctrine. Religion is still professed by the majority, for no particular reason except that it is a part of our social heritage. It thus comes about that a religion is rarely if ever openly repudiated. We still "render unto God what is God's," without looking more closely at the matter, or if we do, we soon discover how small is God's portion. When this is not the case, when God's portion is the greater share, there is usually some especial physical or psychical reason.

It thus requires no stretching of fact to agree with Höffding when he writes, "Religion was in other days like a pillar of fire in the vanguard lighting the way of humanity in its long march through history. Now it has taken on the rôle of an ambulance, it follows in the rear, picking up the maimed and the wounded." [1] Such is the rôle of religion in our times. It has taken refuge in good works, but even here it is being rapidly displaced by secular agencies which are showing themselves more efficient. In fact, look where we will, there remains scarcely a form of social activity that has not emancipated itself from religious control.

If we seek the causes of this change we will find that the mind of man wearies of spiritual dogmas, doctrines or creeds that no longer tally with the facts of his experience. Authority, even divine authority no matter how firmly entrenched, gives ground in the end before the irrefutable logic of facts. Reliance is placed in a new order of relationships which supplant the old gods. Through-

[1] Cf. Harald Höffding, *The Philosophy of Religion.*

out history we may retrace this process. For the mind of man creates the spiritual props of which it stands in greatest need, out of the materials it finds closest at hand.

III

Every new age has its own longings, its own ideals. Every new civilisation has its foundations in a belief that can be presented in a concrete, realisable form. The transcendental, the supernatural, just as the worldly and the natural, are merely useful symbols. Their utilisation is a problem of social psychology. Religion makes use of the supernatural, science of the natural, as a way out of the labyrinth of existence. It is not that one form is in itself higher, or even more efficient than the other, but rather that under certain social circumstances a religious, under others, a scientific view coincides more closely with the felt wants, the actual needs of the times. In the last analysis it is because the physical means of existence —economic life—have changed, that a new set of beliefs are required. But before these new beliefs take shape, before the new creed becomes fixed and unassailable, powerful forces are at work, seeking to maintain the old creed intact.

We have shown how paganism survived long after Christianity had made great headway, and how four or even five centuries after Christ, pagan institutions retained their social ascendancy. In the same way to-day, three centuries and more after the Christian era, as it may be reckoned by historians of the future, many Christian institutions are more or less intact.

Just as feudalism was the social edifice of dominant Christianity, and the national state system, the institutional form of the transition period of its decline, so the new economy will require institutions of its own. Science

for three centuries has been the growing social motive, and industrial institutions are, historically speaking, already displacing religion and its concomitant social forms as the cultural framework of the new age.

The fact that as yet no names have been invented for these new institutions, and that they do not appear plainly discernible beneath the wreckage of the older civilisation, does not mean that they are not well along in process of formation. In the same way though science has not yet emerged as a systematic unity, capable of formulating a creed, a doctrine, a dogma of its own, it is making great strides in this direction.

We hear to-day more about health and hygiene, organisation and efficiency, co-operation, specialisation and adaptation, than we do about predestination, salvation or eternal damnation. Nor is it just chance that we are learning to think in terms of electric, radioactive or automotive, rather than divine, power. Yet notwithstanding the steady growth of the new scientific spirit, and the fact that it is adding daily to its already long list of achievements that heighten the value of life, a note of despair over the decay of the old order and the doom of civilisation is heard in many quarters.

IV

Hardly a day passes but some new prophet of the decline of our civilisation, some Dean of St. Paul's, arises and forecasts a gloomy and desolate future. But when we come to analyse the views set forth we discover that they are based upon ideas, upon an outlook on life biased by pre-scientific prejudices, upon premises that date from mediæval times, or at best belong to the transition period. Nor is this surprising when we realise that in the Catholic world men, if true to their creed, are liv-

ing in the 13th century, in the Protestant, in the 17th century.

Though scientific curiosity is keenly alive and pushing out in every direction, no accompanying spiritual curiosity has permeated the mass of mankind. In spite of the advance of science and the radical changes in our outlook on life, we have been content to reproduce the ideas of the past. Our moral code remains deliberately stereotyped. Christianity, having long since passed its apogee, is naturally content to seek to preserve intact its doctrine and dogma. Its one aim is to see to it that no one shall disturb the Christian heritage.

The real sin in the eyes of the Church has always been heresy. Christianity has from the beginning been intolerant of those who dared question its authority. "The gravest sin is not to obey the Church, whose infallibility protects us from reason. . . . It stood up against Galileo and it did right, for his discovery in its inception, and until it became assimilated to the general body of knowledge, tended to shatter the anthropomorphic belief that the universe was created for man. It opposed Darwin, and it did right, for Darwinism tends to shatter our belief that man is an exceptional animal, created expressly to be eternalised. It opposed modernism. Is it indeed possible for life, life that seeks assurance for survival, to tolerate it?" [1]

The Modernist movement in the Catholic Church was crushed when it dared to reveal its real purpose, which was to place the world of science, of fact, above the world of religion, of illusion. It offered a secular, in the place of a religious interpretation of events, at variance, not only with the dogmas of Catholicism, but with the fundamental conceptions of Christianity itself. Modern-

[1] Cf. Unamuno, *op. cit.*, p. 72.

ists demanded absolute freedom for science, and even went so far as to declare that their faith in the world was more fundamental than their faith in the Church, "because the world is a living whole of which she, the Church, is but an organic part; and the whole is greater than its most vital organ."

The Encyclical of Pius X, of September 8, 1907, was sufficient to nip the movement in the bud. But even without it the movement would have died of inanition, as it could find no support within the Church, and from the standpoint of science the whole argument seemed trivial.

The Protestant liberal movement, which had its origin in Germany in the nineties of the last century, was not without some leavening effect. But it failed in the end, because as one writer well expresses it, "Science can never solve the problems of religion. Religion cannot afford to adopt either the methods or the problems of science. Science has no suggestions for the solution of religious problems." [1]

V

The more recent Modernist-Fundamentalist controversy in the United States is in itself a tempest in a teapot. But it is of interest as an indication of the active, disruptive forces at work in religion. For the first time we find here a movement that cuts across creed and sect. It has brought into the arena of discussion the whole question of what we may term the spiritual value of science. It has focussed public attention in America on the importance of science as the dominant, social motive of our times. It is the age-old struggle between the old and the new. The Modernists in this dispute have had to borrow their arguments from the world of science. Whether

[1] J. M. Mecklin, *The Survival Value of Christianity.*

consciously or not they have gone beyond religion, and basing themselves firmly on a scientific, a "natural" world view, would by mere verbal modifications present this view as though it were that of religion. The Fundamentalists, who would maintain intact the orthodox, biblical interpretation of creation, oppose the teaching of evolution, and cling closely to a supernatural world view. They have in some instances gone so far as to enlist the support of the state in excluding from the curriculum of the public schools scientific studies that conflict with the Bible story.

The phases of the struggle are of little historical significance. What is of interest is that Christianity, no matter how ardently the Modernists may wish it, cannot go beyond itself, cannot without losing all meaning cast off its supernatural interpretation of the universe. Religion has nothing to do with exact knowledge, with a scientific interpretation of events, with a causal sequence that excludes divine interference. The Modernist effort to explain religion, to reconcile it with science can have but one result. As Lord Morley once remarked, "Christianity will be destroyed by being explained."

Every Modernist is really arguing the case for science. No matter what the nature of his argument may be, nor the religious terminology used in an effort to explain Christianity, to adapt it to the new conditions, as many devout Christians sincerely hope, no such adaptation is possible.

Most of us are ready to acknowledge that there are more things under the sun than were ever dreamed of by religion. What about these things? How are they to find a place in our scheme of existence? There was a time when religion filled the horizon of man's life. It played the active dominant rôle in the affairs of this world. But in our times religion must, if it would survive,

deliberately turn its back upon the world. It can do no better than to seek to stem the tide of science. It exhausts its energy in striving to shut men up in the whitewashed bleakness of its Protestant chapels and churches, or in the shadowy recesses of its century-old Catholic cathedrals. The world outside, the sunny, dazzling, ever-changing, restless everyday world of life, action and events, now lies beyond its control. To brand this world as of no value, the abode of error and of sin, will not in the end check the natural and inevitable growth of a scientific world view. Science on the contrary would show us how to make place in the scheme of things for the world we live in. In this sense science offers a way of life far more coherent than that of religion.

VI

When we look for the causes of the decay of religion we soon come upon the crux of the problem we are here dealing with. The cohesive element of a given social organisation rests on foundations either of faith or of knowledge. We believe, or we know. Thus the conflict between science and religion is, when reduced to its simplest terms, a question as to the value of faith *versus* knowledge.

The supernatural interpretation of the universe is a matter of faith; the natural, one of knowledge. Though it may still be impossible to prove the natural cause of all things, it is a sound working hypothesis, in view of the fact that everything that has ever been subject to careful scientific analysis can be ascribed to a natural cause. There are still many things that cannot be reduced to a scientific formula. But this is no excuse for drawing the curtain with the declaration that science can

go no farther, and that a religious interpretation is required if we would have more than a partial view, that faith alone is a sound guide through the dark realm of the Unknown.

Whatever subjective value there may still attach to faith, the fact is that faith is fast disappearing from the forefront of the modern world view. As long as reality is conditioned by the imagination, as long as the mysterious takes precedence over the natural, faith plays an all-important part. Faith is a primitive method of social adjustment of great value as an agency of social discipline when there is no adequate body of knowledge available. It is a direct means of giving authority to social precepts. It sketches, however roughly, a plan of conduct, a pattern of life. When I have faith, I believe. Why do I believe *"Because. . . ."* This is the only answer possible. No valid reason can be given, and the "because" trails off into words that may have mystical value, but no objective validity of their own as a basis for explanation. Thus faith cannot be analysed, or it disappears. It is something felt, if you have the will to feel it, or if your will is weak, it is imposed upon you.

When faith issues full-grown in belief, it does not differ in its outward aspects from belief founded on knowledge. "He who makes plans for to-morrow, or constructs a bridge, or prays God, believes." No one would deny the social value of faith. It binds men to the observance of rules and regulations which would otherwise not have been possible. It fills the void in man's inner life when knowledge is absent. It makes for certainty, and endows action with an aggressive power, as it responds to an instinctive longing in man to be in accord with the world about him. At this stage faith is crea-

tive. It finds in the world of imagination and of hope the confirmation required as to its truth.

It is not surprising that religion seizes upon faith and makes it the first of its cardinal virtues. Out of faith issues God; but not only God. Out of faith is born knowledge. When knowledge once arises and becomes the guide of action it will not rest until it has displaced faith. This is what happened in Greece during the height of its civilisation; this is what we find taking place in the Western world to-day.

The first form of knowledge is negative. Men begin to doubt, to question the world of things as they seem to be. Knowledge at this stage is tentative, theoretical. Faith still acts as the guide in practical life. Then by degrees knowledge encroaches upon the realm of faith. Some of the things taken for granted in faith are proved false, others are given a firmer foundation for belief through knowledge. A new confidence arises from this change. Knowledge becomes the guide of action. Authority, the final arbiter in matters of faith, is replaced by experience which is based on evidence.

Truth now appears clad in new raiment. The truth of faith seems tawdry, like a gaudily dressed puppet. Faith is beginning to crumble. Men turn to knowledge as the source of power.

VII

Such are some of the steps in the slow cultural ascent from faith to knowledge. The pathway of the history of man is strewn with dead gods, with faiths that have been supplanted by knowledge, which in turn takes on the characteristics of faith, and becomes to later generations mere superstition, to be replaced in time by new knowledge as the foundation of belief. The process is

a long one. The natural inertia of man, the ease with which habits of faith once formed become fixed and difficult to overcome, precludes rapid change.

Only twice in recorded history do we find that knowledge has been able to emancipate itself completely from faith. Once for three hundred years in the Greece that culminated in the Age of Pericles, and in the Western world during the past three centuries. But in our times side by side with the growth of knowledge the old faith has been left standing. Crowded out of the practical guidance of affairs, faith took a last refuge in religion and retained a place in the minds of men long after it had been stripped of all social value. Seen in this light religious faith is to-day in the nature of a survival. It serves no useful purpose in our civilisation. In other days this faith was the only means of bringing about harmony between the crude world of experience and the mysterious world of authority, of God. Without faith no social progress would have been possible, no authority would have survived. To-day authority that is not based on experience is disregarded. In faith, authority is the beginning of all things; in knowledge, it is the end of the series.

Furthermore religious faith is essentially immobile, fixed for all time. It permits of no growth, no change. It ignores all that does not feed it or lend it support. Knowledge, on the contrary, is ever seeking new fields of prowess, new ideas to exploit, new worlds to conquer. Our modern civilisation is the result of this unceasing intellectual curiosity that contrasts so vividly with the sterile sameness of religious faith.

The faithful must mumble the same prayers, cling to the same ideas, go through the same rites and ritual, as their fathers and grandfathers have done before them.

The very age of a religious faith lends it added authority, which impresses the human mind as a guarantee of its value and its truth. Transpose this argument into any other field of human activity and its absurdity at once appears patent. "We have become masters of nature," Keyserling remarks, "because we have learnt not to ignore her laws, but to exploit them." [1] Faith as it survives to-day, would have us ignore the laws of nature and cling to the supernatural. It would have us pattern our conduct on a plan that has no close relation to the world of experience. As long as knowledge remained fragmentary, as long as no conception of unity and continuity had made itself felt in science, such a course had to be followed. But this is no longer the case.

Social psychology is discovering new motives in group life. The code of morality accepted as an act of religious faith no longer suffices. Faith is no longer relied upon in any other field of human endeavour. Why should it be retained in the most important field of all, that which has to do with our conduct, our behaviour, our relations with each other, and with the world at large?

Not faith but knowledge is the motive force of our belief. Though most of us have suspected that there is something wrong with the Decalogue, something utopian about the Sermon on the Mount, we prefer not to face it. Thus public opinion still pays its perfunctory respect to this code. But while outwardly conforming we have been privately reserving judgment through several generations. This has undermined religion. The religious faith that survives is for the majority little more than a sham.

[1] Cf. *The Travel Diary of a Philosopher,* Vol. I.

CHAPTER VI

Religion and Morality

I

HISTORY deals with human behaviour as it was, psychology with this behaviour as it is; morality with behaviour as it ought to be.

We have studied religion under the first two of these aspects, we now are confronted with a different problem. We have examined in some detail the foundations of the religious edifice, we have surveyed it from the outside and noted the many scars of time left on the noble structure raised by Christianity. We are now about to enter the sanctuary. We are no longer concerned with questions of the ascendancy, the reality or the expediency of the religious world view. Our attitude is one of expectancy. We are looking for things worth while, things to approve of, or to condemn, we are looking for moral values, duties, obligations; in brief, the highest good which religion claims as its peculiar privilege the sole right to determine.

Morality has to do with conduct, but not with conduct envisaged in an historical or psychological sense, but with the elements that go to determine whether it is right or wrong in itself; with what is right or wrong in accordance with the customs and traditions that it is held to be man's duty to obey. From such beginnings a moral code is devised, and under religious sanctions, as we shall see, the voice of duty is made to coincide with the voice of

God. It is not what we would do, or could do, but what we should do that is the first concern of religious morality. This *should,* which is embodied in a given theological system, is claimed to be ordained by God. The source of its binding authority is revelation, its sanctions are believed to be divine, coming from beyond the realm of experience, and thus have oracular value that is not to be questioned.

II

In the past morality and religion have been linked together and presented as an indivisible whole. This whole has been endowed with sacred characteristics that it was held sacrilegious to touch. It is only comparatively recently that we have come to realise that religion is no longer too sacred to be inquired into, and that morality is not necessarily an integral part of religion at all. Morality is as a matter of fact quite separate and distinct from religion. Though they have grown up side by side, and in the civilisation of the West morality has come under the domination of religion, this condition is neither an historical, a psychological nor a sociological necessity. Moral and religious experience are two very different things, and have little in common. When religion no longer shows the way to the highest good in life, man's spiritual nature seeks to link itself with the discipline that does so. Thus morality, which came into existence before any religion as such was devised, will continue to exist long after a religious view of life disappears.

There is no foundation for the argument that religion must retain control over morality if we are to remain civilised and not lapse into barbarism. The idea of duty, of value, of obligation, of the highest good are conceivable without any divine law-giver. A moral sense arises

exclusively out of social intercourse. Habits and customs become binding in so far as they meet with the approval or disapproval of a given group. It is out of this primitive type of public opinion that moral judgments arise, and it is to public opinion that morality in its highest development returns. Public opinion, not religion, offers the true background of the moral code of civilised mankind to-day.

What then is the religious basis of morality? How did it come about that religion assumed full control over ethics and has been able to retain this control long after religion has lost its direct hold over the minds of men? Let us survey the field of religious morality, confining our survey to the code which concerns most of us, that of Christianity.

III

Morality is a method of life. Religion claims to have the key to the best method ever devised. When we examine this claim, and strip it of all irrelevancies, we find that it amounts to this: The end of morality is this highest good; God is the highest good; therefore morality is at once the gift and the monopoly of the Deity. As Fichte put it, "God is a system of moral values." In this interpretation, "an absolute moral ideal can exist only in a mind from which all reality is derived. Our moral ideal can only claim objective validity, in so far as it can rationally be regarded as the revelation of a moral ideal, eternally existing in the mind of God." [1] This explanation, chosen from among the most recent expressions of the ultimate unity of religion and morality, disregards the fundamental distinction to be drawn between them. It

[1] Cf. W. R. Sorley, *Moral Values and the Idea of God.* Gifford Lectures, 1914-1915.

leaves out of account that morality is in itself a man-made product. It takes us into a realm beyond this world, and posits without foundation in any known fact the wholly irrational idea that the idea of God existed before the mind of man had arisen to conceive the highest good. It leaves out of consideration that, before there is an economy of some sort, before a certain, however primitive, level of culture has been reached, religion and religious values are in themselves unthinkable. It is because in a primitive economy there is so much that cannot be understood, so much that seems to exist without rhyme or reason, that ideas we recognise as religious, arise.

The continuous challenge offered to man's conception of the highest good by the forces of nature, led him to look for support in a supernatural interpretation of events. It was as the result of the ever-recurring destruction of those things which he deemed most valuable, that in seeking a way out, man took refuge in God, and came finally to identify God with the highest good. But this process of identification was wholly imaginative, and in reality gratuitous. It was intimately linked with the instability of the economic foundation upon which the social group rested. When this was changed a new interpretation of the highest good required a corresponding change in the attributes, powers and chacteristics of the Deity. In our own times with the increasing economic security and the rise of a scientific interpretation of events we find that the *raison d'être* of God disappears.

IV

The change in our ideas of the highest good takes place apart from, and independent of, our religious beliefs. Morality—our behaviour as it ought to be—springs from human relationships. It reflects the cultural

level of a given economy. It is the change in this economy that brings about a change in morality and not vice versa. This change precedes and in time renders inevitable a change in all other social institutions.

Thus the roots of religion and of morality may be closely intertwined. But they are none the less separate and distinct. Religion and morality fill different needs. It is out of a sense of dependence that religion arises. Morality on the contrary, implies, however obscurely, a realisation of freedom. This gives to moral conduct its spontaneity which distinguishes it from religion. To be sure religion may supply many motives of morality, but this is far from being the same thing as the assumption of an inseparable unity of religion and morality. Nor are we justified in accepting the view that all religious motives are moral, or all moral acts, religious.

In an enlightened age religion has a tendency to dwarf and stultify morality in that it excludes evidence, and would discount experience, relying exclusively on traditional precepts. Furthermore, religion overemphasises man's place in the universe, and while making him as "created in the image of God," the centre of the universe, renders him helpless in the face of the great forces of nature. The highest values of religious morality are self-surrender, resignation and humility. It builds on hope, faith and fear. It makes use, often meretricious use, of love and loyalty to bind its followers to a blind allegiance. In return religion claims to be able to give a satisfactory answer to the mysterious *why* of all things.

Religion, in the simplest way of putting it, concerns itself chiefly with finding an answer to the ever-recurring question, of the "why and wherefore" of life. It offers a symbolic interpretation of the universe that knows no boundaries, no limits. The religious imagination can, in

a trice, dive down to the lowest abyss of Hell, or soar to the highest pinnacle of Heaven, to the throne of God. Everything here is prearranged, immutable and unchanging. Religious morality excludes all possibility of change in a world where all things are foreordained by the will of God. It is His will that in the last analysis is the sole answer to the question "Why?" Into this mould all experience and evidence are poured, and we have fashioned by the divine maker a vessel that contains the moral law.

Morality, stripped of its religious dress, deals with a far more limited field. It seeks a solution through asking the question, *how*. Morality attempts no more than to offer us a pattern of conduct useful in everyday life. It presumes that a highest good exists, and is concerned with how best to realise it.

V

It is thus evident that religion has no monopoly in matters of morality. Morality and religion are separate and distinct. Morality can and will survive long after all religious beliefs have decayed and disappeared. Though right conduct does not of necessity relate to any religious world view, religion has been able to retain a place in the hearts of men, and play so large a part in social life chiefly because of the glowing colours in which it paints the picture of the moral world. This world is represented as the Kingdom of Heaven. The virtuous man inherits this kingdom as his just reward.

In the spiritual struggles of humanity to reach a higher cultural level, religion has played a great part. It has through long ages often been the sole moralising agency. Those who would have us believe that religion is an instinct, without which man cannot live and grow as a moral being, conclude in consequence that without religion

there can be no morality. But even assuming that the idea of God is essential, and religion, the most elemental of our needs, this would in no wise justify the assertion that religion is to be the sole arbiter of morality. As long as such is the case morality must be nothing more than the process of functioning of the divine order. The outcome of a moral act remains dependent upon the will of some superhuman ordainer, a God. Conformity to the will of God is the sum total of moral obligation. It is to be attained by strict adherence to the dogmas, the creed, the cult of the Deity. The religious view assumes that God's morality is fixed and unchanging. History shows us that morality is as a matter of fact in continuous flux and change. As civilisation advances earlier moral notions become inadequate; a new moral code is necessary. The tribal God of the Jews becomes the almighty, universal God of the Christians, as the result of a widened, moral outlook, an effort to adapt the Deity to the new sense of justice, of duty, of obligation, that had been awakened by the moral teachings of Jesus.

It is man who confers upon his God the moral code in keeping with his cultural needs. Morality must stand or fall unaided. It has no divine origin, and is nothing more than the plan of a good life. Man's moral nature and his religious emotions are in themselves two different things. It is his moral nature that has inspired and purified his religious beliefs.

It thus comes about that a moral precept is taken up by religion and taught as a religious truth. Its mundane origin is lost sight of, and it is presented, clad in imperative forms of speech, as the revelation of the will of God. In its secular aspect a new moral code serves to liberate the human mind. It is a step forward on the pathway of civilisation. In the hands of religion the

moral precept becomes fixed and petrified, and remains long after the conditions which produced it have disappeared.

VI

The two great moral codes that have governed the Western world during the past fifteen centuries, the Decalogue and the Sermon on the Mount, though imbedded in the matrix of history, are treated as of divine origin.

The Ten Commandments are made to appear as the direct expression of the will of Jehovah, the God of Israel, "And God spake all these words, saying," and having delivered himself of the Commandments, "all the people saw the thunderings and the lightnings and the noise of the trumpet and the mountain smoking; and when the people saw it, they removed and stood afar off. And they said unto Moses, Speak thou with us and we will hear: but let not God speak with us lest we die." [1]

It is of interest to note that in spite of the alleged divine origin of the Ten Commandments, they were presented to the Jews, according to the historical account of the event quoted here, by their secular leader, Moses. Subsequent ages, in making use of this code, forgot all about the setting in which it was delivered, and disregarded the fact that admirably adapted to the needs of a pastoral people it had for its principal and possibly sole object to enforce the dictatorship of Moses over the Jews. One need but read the ensuing chapters of the Books of Exodus and Leviticus, which contain minute interpretations of the Commandments, to realise the true historical nature of this code.

As religion was the dominant motive of social control among the Jews, their moral code was invested with sacred

[1] Cf. Exodus, Chap. 20, v. 1, 18, 19.

characteristics. It marks a distinct step in advance over the morality current among the other peoples at the time. But it is at best a primitive code, harsh in outline and crude in expression, such as an uneducated shepherd like Moses when called upon to become dictator would be likely to devise. Its purpose was to create some kind of social organisation among a people that had recently won its freedom. It is concerned wholly with practical problems of everyday life, with bringing order out of chaos and silencing the voice of the malcontents among the motley throng that was marching with its flocks and herds, slaves and chattels across the desert towards Palestine, in search of a suitable and permanent camping ground. It is not surprising that the Ten Commandments do not rise to any high intellectual level, and are spiritually far below the moral code we find current among Hellenic peoples of the days of Plato and Aristotle.

VII

When we turn to the Sermon on the Mount a further advance may be noted. Here a higher morality, based on spiritual values, is no longer secondary. The Sermon is not a series of severe edicts that are to be obeyed to the letter, nor yet a set of intellectual abstractions devoid of practical value such as we find in the "Republic" of Plato, but a collection of affirmative epigrams that embody certain elements of the concrete Jewish code and the finer fruits of Hellenic intellectualism. The whole is made over and softened in accordance with the temper of the age of Augustus.

The code of morality of Christianity was in theory based on the Sermon on the Mount. Here we find in closest union morality and religion. Morality and religion become synonymous, but this harmony is attained

only by counting implicitly on the religious devotion and the reverence of the faithful. Under Christianity conduct becomes a religious enterprise. The moral order is shorn of its secular characteristics. The Sermon tells us, "Take no thought for your life, what ye shall eat or what ye shall drink; nor yet for your body, what ye shall put on. . . . Behold the fowls of the air: for they sow not, neither do they reap, nor gather into barns; yet your heavenly Father feedeth them. Are ye not much better than they?" [1]

These and many other passages that might be quoted reveal the nature of this document. We may recognise the influence of the cry *panem et circens* that was a favourite one at the time in the Roman world. The appeal is more directly to a superhuman world order that in the language of the Sermon on the Mount is made to take the place of the existing world. Inspired by his new-found faith the primitive Christian is to leave behind the world of uncertainty and doubt, of unhappiness and earthly woe. God becomes the universal provider, upon whose shoulders the whole burden of living may be shifted.

The human spirit lends itself readily to the acceptance of such a gospel of love and security. Earthly existence now counts as nothing when compared to life hereafter. Here was a moral code doubly welcome, not only to the disinherited of this earth and to the lazy, but also to the ambitious, the pusher, the climber, for does it not expressly recommend, "Ask and it shall be given you, seek and ye shall find, knock and it shall be opened unto you. For every one that asketh, receiveth . . . and to him that knocketh it shall be opened"? [2] The Kingdom of Heaven

[1] Cf. St. Matthew *Gospel,* Chap. 6, v. 25, 26.
[2] *Idem.,* Chap. 7, v. 7, 8.

is no longer the especial heritage of a chosen few, it is available for all who come.

Such is in bare outline the origin of the code of conduct that dominated the course of history of the peoples of the Western world for more than a thousand years. It set up a duality between the world as it actually is, and a supernatural world to which Christian ethics applies.

The Sermon on the Mount is more in the nature of a reverie than a practical moral code. Here are set forth the values, duties, obligations that belong to another world order that is the figment of a fertile, a poetical imagination, but has little in common with practical affairs. The philosophy of life, the pattern that is to serve as the model of behaviour to which Christian ethics applies, presupposes an exclusively religious interpretation of value. It could only be made to apply to an environment that has no correspondence with reality. It is at best symbolical. It would therefore have only in a very special sense actual significance in everyday life. Yet for centuries the most cultured class in society sought to interpret it literally.

VIII

It is no difficult task to point to the unethical aspects of the Sermon on the Mount as it was subsequently incorporated in the Christian moral code. Morality has to do with the seeking after the highest good in life through the fulfilment of our duties and obligations towards others. It concerns the conduct and behaviour of men and should have no ulterior motive. Religion would inject into morality such a motive. The Christian code finds the pattern of life in heaven. Man has no choice but to

follow the dictates of a superhuman will. To be sure the will of God often coincides with the highest needs of men. But even if it should not do so we have according to religious doctrine no right to question, much less to dispute, His commands.

The history of Christianity is filled with episodes which reveal that man's social purpose was held to be secondary and incidental to the chief aim of religious morality. Christianity has always disregarded social welfare when it comes into conflict with the promotion of "the power and glory of God." It is the will of God, not the welfare of mankind, that matters. This will often conflicts with the ethical ideals of social life, more especially when the religious hold over the imagination of men is beginning to show signs of decay.

The wars of religion from the Crusades onward; the persecution of heretics culminating in the Spanish Inquisition; the intolerant attitude of Christianity, both Catholic and Protestant, towards science from the days of Galileo and Newton down to our own; the bitter opposition to all efforts of the human spirit to emancipate itself from the superstitions, kept alive for religious purposes; the surrender through long ages of the highest values of this life in an effort to win a life of eternal happiness in heaven; the shadow cast upon what should be regarded as normal and healthy appetites and pursuits, and the branding of them as sin; the doctrine of predestination and damnation are a few examples of the effort to apply the Christian moral code to the problems of existence.

No one would deny that a long list of benefits, conferred by Christian morality, might here be cited. Through the Dark Ages it kept alive the cultural spirit of the Græco-Roman world which might otherwise have

perished under the ravages of the successive barbarian invasions. It was the great civilising agency among the invaders.

IX

Christian ethics developed and promoted a sense of human helplessness in the face of the forces of nature, a denial of the worth of life and human effort. It compelled the acceptance without question of a theological system which in its interpretation of the universe left no room for improvement or progressive development. It taught that everything, evil as well as good, crime and suffering, disease and disaster, was a part of the appointed plan that it was worse than useless to attempt to remedy. To quote St. Augustine, "Everything that is, so far as it is, is good."

In the light of Christian morals, life in this world is an ordeal to be endured. Does not the Christian code expressly state, "But woe unto you that are rich! for ye have received your consolation. Woe unto you who are full! for ye shall hunger. Woe unto you that laugh now! for ye shall mourn and weep. Woe unto you when all men shall speak well of you! for so did their fathers to the false prophets." [1]

Such is God's will according to the words of Christ. At its best it inverted all known and reasonable human values. It made life on earth over into a nightmare. Death was to serve as a glorious awakening. The reward was to be immortality. The price, the denial of all that life holds precious, the joy of living.

Fortunately for mankind, many of the precepts of the Sermon on the Mount were soon recognised by the

[1] Cf. St. Luke, *Gospel,* Chap. 6, v. 24-26.

Church itself as untenable for common usage. The code of Christian morality was modified by the introduction of a more practical world view. In this way a compromise was arrived at. The moral code as set forth in Christ's Sermon, however, was not abandoned. It became the guide of conduct for those who gave themselves up exclusively to the religious interpretation of the universe—the monastic orders. Theirs was the grand business of salvation through a strict adherence to a literal carrying out of the true Christian code. Theirs was the nobler and better way of life, the only way that made salvation a certainty. Next in the scale came the secular clergy, whose function it was to look after the spiritual needs of the laity, who were placed far below them at the foot of the ladder. To grant indulgences, to inflict penances, to offer prayers and administer sacraments was the function of the clergy. This left the common run of mankind the time to gain a livelihood and pursue secular ideals and aims. Thus a way out was arrived at, though it was far from freeing men from an ultimate accounting to God. The pursuits of everyday life were looked upon as a consolation for having been born, a means of filling in the gap until the day of deliverance at death.

Such was the transformation that took place in Christian morality. In the monastic way of life the code of the Sermon on the Mount was to be preserved intact; in secular life many of the moral precepts belonging to the pagan world were incorporated and adopted in order that Christianity might be made acceptable to the multitude. Did not St. Augustine himself write an apologia of war, and endeavour to prove that it was not inconsistent with Christ's doctrine of "love thine enemies"?

X

In a later age Christian theology made direct appeal to Aristotelian ethics as proof of its validity. But with the scholastic disputes we enter upon the beginning of the decline of Christianity. We are on the eve of the Renaissance. The unrest within the Church, the corruption prevalent among the monastic orders and the clergy are portents of change. The real causes are to be sought in the new secular morality that was beginning to take shape. The Christian moral code was being called into question. The economy of the Middle Ages, upon which the religious world view had been erected, was beginning to crumble. The *Summa Theologica* of St. Thomas Aquinas was an attempt to base Christian dogma on reason, to prove that it was super-rational. And it is significant that the author devotes much space to the discussion of economic questions. The Christian ideal of poverty, though it remains, is no longer a precept. "Difficile est," says St. Thomas, "caritatem servare inter divitias." But economic questions are not yet emancipated from religious control. The chief business of life is still salvation, not prosperity or progress.

The religious economy of the Middle Ages is now about to be replaced by political economy; religious morality, by secular morality. In spite of the fact that political theory remains for the time being under the influence of religion, and seeks to adapt the forms of religion to its secular needs while making religion subservient to politics, a radical change takes place in the implications of morality. The older Christian ethics are by degrees abandoned. In the new economy that we see taking shape after the 15th century religious morality is relegated to the background.

We are on the eve of the age of modern capitalism.

One by one the older ideas about the place of wealth in the affairs of men are discarded. The Reformation gives great impetus to the new economy. A place for secular business is found within the orbit of religion. Business in its modern sense, the accumulation of wealth, is proclaimed by Calvin part of the divine plan. We have travelled far from St. Thomas, who in his *Summa* tells us that "the perfect happiness of man cannot be other than the vision of the divine essence." For Calvin, economic self-interest is the expression of the grace of God.

Here we have the origin of that economic individualism that was destined to lead to the overthrow of religion as the principal concern of mankind. Not that Calvin intended such a purpose. His moral code was still imbued with the mediæval spirit. His was a reaction against the liberty and license that accompanied the emancipation of the human spirit during the Renaissance. To Calvin "labour is a thing good and godlike. . . . In the things of this life the labourer is most like God." But not so the spender, the lavish patron of poets and painters. Thrift, hoarding, the accumulation of money for money's sake, were the new virtues which the Calvinist reformers of Christianity extolled. The age of unscrupulous capitalism appears as though it were the direct consequence of these teachings of Protestantism. But the cause of the change is not to be laid at their door. This is to be sought in the new economy that had been developing ever since the 14th century and came to fruition in the 17th century.

Hereafter religious morality steadily loses ground. But it fights a determined rearguard action. The Christian world view is making way for the new scientific interpretation of the universe. But the fear of God remained firmly fixed in tradition, and it was not to be easily over-

thrown. The emancipation of the minds of men from an other-worldly way of thinking made slow, very slow progress. The inheritance of centuries of rigid habits of thought that had governed the conduct of a whole civilisation was not to be destroyed overnight.

XI

The leaders of the Reformation, Luther, Calvin and their followers, were so intent upon discrediting the authority of the Papacy that inevitably the pendulum swung to the opposite pole. The Church of Rome had placed its emphasis on social hierarchy, had condemned the accumulation of wealth, and proscribed as usury the lending of money at interest. It had placed the middleman, the businessman, at the bottom of the social ladder, and emphasised collective responsibility. It was not the individual worker, nor even his family, but the guild, the corporation, that counted.

The Protestants made individual responsibility their point of departure. They substituted an individualist moral code for the older Catholic view of life. Protestant Christianity in its eagerness to destroy the Roman creed perverted the older religious code which was based wholly on a supernatural interpretation of the universe, and sought to substitute a natural order. Under Catholicism religious morality was a sacred business, remote from this world. Salvation was a certainty only for those who led a special mode of life. The fact that the monastic orders had become corrupt did not change the ideals of monasticism, nor deprive the religious world view of its sacred elements, based on an authority divinely sanctioned, without which religion cannot endure.

In the eyes of the Protestants the worship of the Virgin and the Saints, and those elements such as relics and

holy water which made for supernaturalism, were condemned as so much claptrap. In the new view any and every man became his own judge in matters of religion and morals. Man was to face his God unaided by any sacraments of the Church. He was no longer required to confess his sins, nor was absolution for them possible.

Religion had been brought from its abode in heaven, and was now to dwell on earth. The result that followed was inevitable. Though after the Reformation morality still retained the dress of religion, it was not long before a new code of conduct took shape, which had nothing to do with the Christian conception of the universe. Morality was cut adrift. Religion was supplanted by politics, and retired to a secondary place in the affairs of men. It became a matter of private concern.

While within the Church the Reformation was in full swing, Machiavelli in Italy, Bodin in France, Hobbes in England were exalting the supremacy of the political state, and proclaiming that Christian morality had no proper place in public affairs. The old Roman conception that morals and politics have nothing in common was revived. It served to free politics from the trammels of religion, and made possible the growth of a secular world view. "The Machiavellian doctrine that political development cannot be made subservient to moral law, that in promoting the welfare of the State, the Prince cannot be held amenable to the accepted code of morals now gained support, not merely of politicians, but also of political theorists and public opinion." [1] The political state becomes a world in itself, above all law. While the forms of Christian moral principles were still

[1] Cf. my *Trend of History,* p. 211. In the 19th century it became commonly accepted that "Princes sometimes commit shameful deeds, but we cannot blame them when their acts are useful to states, for shame is covered by advantage, and is called wisdom." Laurent, *Etudes sur l'Histoire de l'Humanité,* Vol. X, p. 344.

outwardly adhered to, the conduct of affairs, both public and private, totally disregarded them.

In the bankruptcy of Christian morality that ensued little remained that seemed worth saving. A new world view had to be built up before a new moral code could be devised. Protestantism made possible the growth of a natural as against a supernatural interpretation of the universe. Though Christianity in its Protestant interpretation became a bleak and monotonous form of worship, it performed one great function. It left men free to look to the world about them, to nature and natural law, to a natural not a supernatural universe.

What are the essential elements of this natural world? What the cohesive unity underlying the disparate attempts to probe nature by dividing it up into various compartments, labelled science? It is out of a unity of the sciences that we may expect a new moral code to emerge. For the past three centuries the world has been groping for such a code. In order to see how matters stand to-day, we must examine afresh what is meant by science, what are its cultural aims, what its social purpose, what its value to civilisation as a means of achieving the highest good.

BOOK II

CHAPTER I

The Foundations of Science

I

We have surveyed in some detail the more important aspects of the religious world view, and noted the changes that took place in the social life of the Western world at the close of the Middle Ages. As the influence of religious principles begins to wane we observe a new outlook on life growing up. The chief characteristic of Modern Times that marks it off from the preceding age is that men now dare to formulate a set of social principles freed from religious bias. Politics replaces religion as the chief public interest. New motives of action come into existence, and in consequence the social structure of the West undergoes profound changes.

The basis of truth has been broadened. Natural law replaces supernaturalism as a first principle. This leads to the triumph of a secular interpretation of events, and prepares the soil for the growth of a scientific world view.

Religion is, as we have seen, primarily cosmopolitan and universal. Politics is local and national. The former demands obedience to God; the latter, loyalty to king and country. Under the influence of politics, patriotism replaced worship as a public duty; individual responsibility took the place of social solidarity. In the beginning it was sought to make these changes by pouring the new wine into the old bottles. The Reformation, which was

clad in religious dress, was in its effects a political rather than a religious movement. Its chief contribution was that it signed the death warrant of the old religious economy, and made possible the rise of political economy and the political state system.

The new economy forcibly displaced religion as the central factor in social life. Political economy required a more liberal atmosphere in order to be able to prosper. Political principles offered the necessary impetus to action in keeping with the new economic motives. The sphere of man's activity was no longer to be the Kingdom of God but the kingdoms of this earth.

II

The peoples of the Western world now turned their backs on religion. They did not go so far as to exclude it altogether. The door was left ajar so that at the end of life a safe exit might be made into the Kingdom of Heaven. But none the less religious principles in time became irrelevant to the chief business of life.

The ferment aroused by the Renaissance and the Reformation, and kept alive by the Counter-Reformation and the religious wars of the 17th century, died down. The intolerance that had during these two centuries artificially energised religion and lent it a semblance of driving power, gave way before an attitude of tolerance which made for open-mindedness. Men dared to look at the world close about them, dared to gaze once again with curiosity, and then with longing, at the tree of knowledge where new and strange fruits were ripening.

The older teachings of religious truth became inadequate. The foundations of belief, it was being discovered, are to be sought in the world of experience. Exploration and investigation, an empirical point of view, re-

placed dependence upon authority. Men now stood on the threshold of a world of ascertainable facts. They took cognisance of themselves as free agents; no longer mere puppets in the hands of an arbitrary God. Though religion survived and marked off for itself a vast domain that was for the time being respected as taboo, an ever-broadening field of inquiry was thrown open to the diligent investigator, bent on charting the coastline of the new and unexplored world that stretched out before him.

III

Events in history do not happen in a haphazard fashion. Long before an event takes place the impelling force, the underlying motives that determine the course of events, have been in process of development. Though men of action are prone to believe that theirs is the original as well as the ultimate source of power, that events are made by them, this is a superficial interpretation. As a matter of fact an event is the result of a long lineage of carefully built up and prepared ideas, based on principles of which even the chief actors may be, and more often than not are, totally unaware. This explains to us how it came about that when after the Reformation men appeared to be quarrelling and fighting about matters of religion they were in point of fact engaged in a struggle for political emancipation.

Politics was at that time so new a force in social life, that it is not surprising that it was not recognised as diametrically opposed to everything that had hitherto been held sacred. Under the religious sanctions of the feudal system the individual had counted for little. His place in the world was allotted to him by his hereditary status. The elaborate social hierarchy of the Middle Ages which

was based on a carefully defined and graduated chain of personal allegiances, now made way for the political idea of free individuals, owing personal allegiance to no one, but patriotic devotion to the State.

The law which under religion was invested with a sacred character as being the revelation of the will of an Almighty God, in the new order, became the expression of the combined wills of the members of a given national unit. Hence arose the idea of national sovereignty, and ultimately of the "sovereign people."

Religion had sought to control both the inner and the outer man. Obedience was required in private as well as in public life. Now private conduct is left under the direct guidance of the individual. Politics only takes cognisance of private affairs in so far as they disturb public order. Politics knows nothing of sin; it deals only with crime.

Religious principles had laid so much emphasis on the moral aspect of all transactions that it is not surprising to find that politics should have sought to free itself from all moral restraints. Political economy thus got rid of all of the older ethical ideas. It proclaimed its independence from all moral obligations as hitherto understood. It became a commonly accepted maxim that, "Ethics is connected with politics only so far as the well-being of any individual is bound up with the well-being of society."

The breakdown of religious principles as the dominant motives of social control left the field free for the growth of political institutions. Politics proved itself to be essentially a disruptive force. It broke up the social unity of the Western world, and destroyed the fixed hierarchy of feudalism. It seemed as though the social solidarity of the peoples of the West, which Christianity had developed, would be lost for all time. But if we will but

look closely we will discover that among the independent, mutually exclusive national states that grew up on the ruins of the mediæval world, a new type of unity takes tentative shape. It was no longer a unity such as the Church of Rome was able to promote by assigning to everyone a place in a future Kingdom of Heaven, but a mental, and to a limited extent a moral unity, the direct result of an empirical way of thinking about the affairs of this earth, in which the State played a preponderant part.

IV

The foundations of political society are secular. A rational point of view required that men should look to the world about them for the origin, the cause of things. Once they had begun to do so they believed that they had discovered a pattern and purpose in events and phenomena which knowledge could explain, and reason interpret. For the first time since the days of classical antiquity, life in this world was deemed to hold a meaning of its own without any direct reference to another life in a world to come. A new scale of values was in the making.

The awakening of modern science is the direct result of this new interpretation of the values of life. Science is introduced into the modern world as the handmaid of politics. We have already dwelt upon the contrast between the religious and the scientific world view. But we must now endeavour to get to the bottom of the matter and examine the premises of science as an independent body of knowledge. We would retrace very briefly the foundations of the scientific world view and point out its social significance in the modern world. In order to do so we must analyse the implications of sci-

ence. We would treat science as we have in the first part of this work discussed religion, inquire into its historical, psychological and moral nature.

Hitherto science has been dealt with only as a technique. It has been made to serve the needs of political society. As we view it, politics as a motive of social organisation is to-day making way for new institutions, just as in the 16th century religion made way for politics. As in the Middle Ages politics was a branch of theology, and science as such was unknown, and in Modern Times politics freed itself from religion and made science subservient to its needs, so to-day we may see a new scientific social purpose—industrialism—freeing itself from the control of politics, and taking on autonomous characteristics.

Though for the past three centuries a body of scientific knowledge has been growing up, and political institutions prospered with the aid of science, it is only in our own times that science is beginning to formulate a social programme of its own, is creating its own institutions. In short political society is giving way to industrial society as religious society was supplanted by political organisation after the close of the Middle Ages. I have pointed out elsewhere the main currents of this movement towards industrialism, as emphasised by the decay of political institutions.[1] We are now beginning to discern that the scientific world view is becoming the dominant motive of social life.

Economic life to-day is in its principles and practice altogether at variance with the older political economy. It only leads to confusion not to recognise the fundamental difference between industrialism based on a scientific world view, and the economy of political

[1] Cf. my *Thirty Years of Modern History* (1926).

society that flourished during the age that is drawing to a close.

In the same way the stable foundations of science, the mechanical interpretation of the universe that Descartes offered is no longer satisfactory. "The foundations of scientific thought are becoming unintelligible. Time, space, matter, material, ether, electricity, mechanism, organism, configuration, structure, pattern, function, all require reinterpretation. . . . The truth is that science started on its modern career by taking over ideas derived from the weakest side of the philosophies of Aristotle's successors. If science is not to degenerate into a medley of *ad hoc* hypotheses, it must become philosophical and must enter upon a thorough criticism of its foundations." [1]

V

The distinctive feature of Modern Times which witnessed the rise of the political institutions under which we still live to-day, was the rebirth of science. Only once before in the history of the world, in the Greece of classical antiquity, has a scientific world view flourished. As Santayana has so graphically pointed out, "The first period in the life of science was brilliant but ineffectual. When every mind was so fresh and every tongue so clever, no scientific tradition could arise, and no laborious applications could be made to test the value of rival notions. Men of science were mere philosophers." [2]

The scientific knowledge bequeathed to the Western world by Greece was for long centuries lost sight of. Science has to do with the world of experience, is nothing more than a complete, and in so far as possible, accurate description of the facts of this experience. But it can-

[1] Cf. A. N. Whitehead, *Science and the Modern World,* p. 24 (Lowell Lectures, 1925).
[2] Cf, *The Age of Reason,* Vol. V, p. 4.

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not survive in a religious atmosphere where experience counts for nothing in comparison with the dictates of authority.

The reawakening of an interest in science dates from the revival of individualism. It was the emancipation of the individual during the Renaissance that led men to feel themselves in sympathy with the spirit of Hellenic culture. The effort to reconcile the Hellenic spirit of science with Christianity as attempted during this period by men like Pico della Mirandola, could in the end have but one result—the overthrow of religious authority, which was to open the way for the spread of scientific methods. The freeing of the individual from the bondage of the Church was the most important intellectual contribution of the Reformation in that it served to make possible the subsequent development of science.

The Lutheran heresy had in itself little or nothing to do with science. Luther himself was totally lacking in the unbiased and critical spirit required in order that scientific ideas may thrive. He was little more than an inspired demagogue, for whom religious reformation meant the liberation of the individual from the fetters of the established Catholic hierarchy. His was the first voice raised to sanctify the individual as self-reliant and autonomous.

To Luther the individual was a world in himself, and he undertook a justification of individualism within the boundaries of religion. Hereafter man was to be his own redeemer: this world, the sphere of his redemption. Luther consecrated the individual as such. He saw in him the expression of the purpose of God. The religious world view had sacrificed the individual, had closed all of the roads to the development of the self as an independent unit. Now the Reformation, while still retaining

much of the older religious doctrine, injected into the pattern of the universe man as a free agent. The social order was no longer to be a compact unit, but a conglomerate of individuals, each living in a world of his own; a world of sin, to be sure, but none the less a world of experience.

The incompatibility of such a view of individual responsibility with the older teachings of Christianity was not taken into consideration. The new religious sects that arose after the Reformation were apparently unaware of the fact that they had, in emancipating the individual, laid the foundation of a new world view that would lead to the displacing of religion as the most important business of life. Luther praying devoutly, exuberantly to his God, smashing with a holy enthusiasm the social creed of Catholicism, placing passionate experience above traditional doctrine, an iconoclast and profaner of the highest and most sacred institutions of Christianity, was in reality clearing the ground so that the modern scientific world view could grow up.

The effects of the Reformation were not limited to those who accepted its message and emancipated themselves from Rome. In the teeming world of the 16th century the new principles of individualism spread rapidly. Under the impetus of science, the idea of progress was coming into the world. The printing-press, the mariner's compass, the use of gunpowder, the discoveries in astronomy, were some of the concrete results of the new scientific spirit. It led the thinkers of the age to take stock of their efforts. For the first time progress, as an end in itself, comes to play a part in the universe. The progressive tendencies of the human mind, the idea of perfection through man's own efforts rather than through grace, were to become the incentive of the peoples of

Modern Times to seek for happiness in the progress of science rather than through religion. The "pursuit of happiness," which was to be a guiding political principle, had its origin in the scientific spirit of the new age. The fact that this happiness was henceforth to be measured in terms of material well-being was boldly proclaimed by Francis Bacon, who already in the early 17th century had declared that the happiness of mankind is to be sought in the progress of science. Here we have the beginning of the inductive method, of classification and quantitative interpretation of scientific data that has dominated science ever since.

The time was now ripe to gather together the loose ends of the new scientific conception of the universe, to offer, if not a philosophy of science, at least a philosophy based on scientific principles. This was the great work undertaken by Descartes.

VI

Luther had made use of an emotional, intuitive method to proclaim the advent of the individual as the central factor in all experience, a sinner to be saved personally by the direct intervention of Christ. His was a violent reaction against mediæval rationalism. In the same way the men who laid the foundations of the modern scientific world view, Copernicus, Leonardo da Vinci, Giordano Bruno and their contemporaries, looked upon nature, not from a rational, but an emotional point of view. Theirs was a great faith in nature rather than a reasoned knowledge of nature; a reaction against the rationalism of the mediæval scholastics, who had sought to prove the validity of the supernatural by an appeal to reason. The earliest precursors of modern science on the contrary were

moved by a living faith in nature to accept natural law as transcending in some particulars divine law, which meant in the end substituting Nature for God.

Now all this was to be changed. A man appeared on the scene who was to offer a rational interpretation of the universe, more in keeping with the true scientific spirit. The *cogito ergo sum* of Descartes introduces us to the age of reason. Science at the hands of Descartes takes on a logical rigidity from which it was not to depart until our own times.

In making reason his sole guide Descartes laid the foundations of a seemingly coherent and consistent scientific world view. He broke definitely with the past and proved to the apparent satisfaction of succeeding generations that "thought and extension," or as we might more simply put it, mind and matter, are distinct and separate and have nothing in common. Matter is mere mechanism, while mind is spiritual substance. So confident was he of his hypothesis that he went so far as to locate this spiritual substance at a definite point in the brain. In this way it came about that the foundations of modern science rest upon an antagonistic dualism of mind and matter, and upon mechanism. Physics becomes the dominating science.

Reason is the lamp that lights the pathway of progress. Reason is the divine in man, that makes him lord of the universe. But it is not the reason made use of by the scholastics. We have left far behind the squabbles of realism and nominalism. Descartes makes a clean sweep of all that has gone before. He would start afresh and devise his own method, and boldly proclaims that, "Reason is the universal instrument that is available for every occasion. . . . Whether awake or asleep we ought

never to allow ourselves to be persuaded of the truth of anything unless on the evidence of our reason." [1]

Thus Descartes transforms reason into the great solvent of the problems of the scientific age. Evidence is for the first time to be taken into consideration. This evidence is to be rationally demonstrable. Reason offers certainty of proof, and science cannot get along with less than certainty. In a world of flux and change, of progress and the "pursuit of happiness," reason is fixed and immovable like the North Star. Intuition and emotion play no part in the Cartesian method. Doubt and error cannot enter as long as reason rules supreme. Matter remains mere mechanism, ruled over by mind. Matter in itself is valueless and without purpose, so much clay to be moulded, and endowed with purpose by mind. Reason is enthroned and sits on the right hand of God. Reason is the god-like in man. Descartes sets forth the independence of mind. He proclaims after a fashion the independence of the individual and the possibility of his unlimited growth and development.

The first purpose of science is, according to Descartes, to inquire into the nature of matter; to delve deep into mechanical problems, to the exclusion of any moral or spiritual considerations. Separate and distinct from all ethical and æsthetic considerations, science is confined to the contemplation of matter. It broods over problems of physics. It makes use of mathematics as the most logically consistent for its purpose, the most easily demonstrable.

Mathematics was given first place among the sciences. Brute matter might rebel at times against arbitrary classification and even measurement, but mathematics with its accurate system of notation borrowed from the Arabic

[1] Cf. *Discourse on Method,* Part IV, concluding paragraph.

was powerless to do so. Thus science concerned itself exclusively with quantities, with classifying and measuring such quantities. It was admirably suited to explore and explain a universe which was posited as mechanical. This mechanical interpretation which Descartes sought to demonstrate, was to become the scientific dogma that reigned relatively undisturbed, until the dawn of the 20th century.

VII

Such are some of the essential elements of the foundations of modern science as laid by Descartes. Impatient to arrive at some solid ground upon which to build, he chose the easiest path that lay open before him. He made thought independent of things. He set up a dualism between mind and matter which from the beginning vitiated and confused the aim and purpose of science. He borrowed from religion some of its intuitive truths, and baptising them as rational, burdened science at the outset with a load it has had to bear through three centuries.

In his effort to free the philosophy of his day from the worn-out syllogisms of scholasticism, Descartes erected into a rational system the hopes and longings of his times for individual freedom, for some foundation of belief that would bring certainty and security in a confused and confusing world. Nor must it be forgotten that he was imbued with a profoundly religious spirit. He thought that he was demonstrating afresh indisputable reasons for belief in the existence of God when, as a matter of fact, he was separating for all time the world of science from that of religion. Nevertheless, as Mr. Whitehead has recently pointed out, "Descartes in his distinction between time and duration, and in his way of grounding time upon motion, and in his close relation between matter

and extension, anticipates as far as it is possible at his epoch, modern notions suggested by the doctrine of relativity, or by some aspects of Bergson's doctrine of the generation of things."

Thus Descartes, notwithstanding his attachment to religion, in spite of the fact that while he was preparing his "method" he made a pilgrimage to Loretto in search of spiritual comfort and guidance, belongs to the age of science. Though it was far from his intention he brought about the divorce between religion and science which was to have far-reaching consequences. It led to the denial of all connection between spiritual and scientific values.

The scholars of the latter Middle Ages had been concerned with rationalising the supernatural, in order to make God fit in the logical scheme of things. The thinkers of Modern Times were intent upon finding a way to rationalise nature in order to justify the declining authority of religion. What took place was little more than a process of substitution. God still remains *ex machina* in the new science. It is Reason that is enthroned and for the time being becomes the god of science. The rigid scholastic universe is in a sense taken over bodily, and we now find in science, nature and natural laws described as fixed and unchanging.

Matter is the helpless clay in the hands of reason, as man had been in the hands of God. Paley's argument that mechanism presupposes God as the author of nature is 18th century science, but by a slight rearrangement of terms, it might well have been 13th century religion. Mind has now taken in science, the place of the irresponsible God of religion. On the other hand it is not surprising to find 18th century rationalists going so far as to deny the existence of God. Voltaire's famous *"écrasez*

l'infâme" is a direct, if undigested, expression of the new scientific view.

All spiritual values were from the outset banished from the realm of science. Science was to confine itself exclusively to investigating problems connected with the material world. It was held to be unworthy to deal with the higher ethical or æsthetic values. At all costs religion and science were to be kept apart. Science, so it was believed, could offer no interpretation as to the meaning and purpose of life. It was equipped to deal with problems of mechanism, not with those of mind.

VIII

But the scientific world view in spite of the *a priori* limitations placed upon it, in spite of the confusion as to its function and aims, which existed in the minds of the men of the 17th and 18th centuries, introduced one great change. Mechanism and the duality of mind and matter might be based on false premises, but they riveted the attention of the peoples of the Western world on the affairs of this earth, on matter as something capable of being manipulated, altered, changed, on man as capable of improvement and perfection by his own efforts.

Henceforth progress was to replace providence as a cardinal principle of action. The material universe was to be transformed by a rational attention to the problems of nature. The mind of man was awakened to the possibilities of increasing his own well-being. Science was creating a new technique, that subsequently led to a rigidly materialistic interpretation of the universe in place of the older supernatural view. A scientific world view was replacing religion in the thoughts of mankind.

As we can see it to-day the dualism and mechanism of Descartes vitiated at the start the true function of science.

In this sense M. Maritian is correct when he declares, "Ainsi la réforme cartésienne n'est pas seulement à l'origine du torrent d'illusion et de fables que de soi-disant clartés immédiates ont jetées sur nous depuis deux siècles et demi; elle est responsable, pour sa lourde part, de l'immense futilité du monde moderne, et de cette étrange condition où nous voyons aujourd'hui l'humanité, aussi puissante sur la matière, aussi avertie et rusée pour dominer l'univers physique, qu'affaiblie et désorientée devant les réalités intelligibles auxquelles l'humilité d'une sagesse soumise à l'être l'associait autrefois; pour lutter contre les corps elle est equipée comme un dieu, pour lutter contre les esprits elle a perdu toutes ses armes, et les lois sans pitié de l'univers metaphysique la broient dérisoirement." [1]

In spite of this indictment Descartes was a great emancipator. Henceforth the human spirit was to have a field of enterprise all of its own. There was no longer place merely for the Deity in man's outlook on life. The scientific interpretation of events was teaching men not to look any longer to heaven, but to this earth, to nature and natural laws for salvation; to make a place for themselves in the world as it exists about us in its manifoldness and complexity.

Out of the chaos of a decaying religious interpretation of the universe after two centuries of embittered religious struggles, a new freedom, a new sense of order, a rational interpretation of the world, was being offered. For the first time it took into consideration man as a free agent, capable of creating new values by his own efforts, through the application of scientific methods. Science thus lent a new dignity to man, as an individual responsible for his own plan and purpose in life. The

[1] Cf. *Trois Réformateurs* (Paris, 1925), p. 115.

idea of progress becomes the great First Cause. Linked with perfectibility it offers an explanation as to the aims of science. Did not Pascal declare, "The human race is a man who never dies, and always advances towards perfection"?

Yet we must not be surprised to find that some of the older religious beliefs in a rigid and immutable world order were built into the foundations of science. Just as in the early days of Christianity the temples of the Forum, and the Coliseum were looted of their best blocks of marble to be used in the building of the Christian churches, monasteries and convents that were springing up in the Eternal City, so various concepts were taken over from the world of religion and made to serve in the building of the new scientific edifice. In the process certain spiritual values crept in which, long neglected, and their existence even stoutly denied by scientists themselves, are beginning to be plainly discernible. The science with which we are concerned to-day takes these spiritual elements into especial consideration.

CHAPTER II

The Significance of Science

I

THE limitations placed upon science, the exclusion from its world of matters of spiritual concern, while restricting the scope of science, made for rapid progress in its narrower, chosen field. To observe, to analyse, to describe the facts of nature, was held to be its sole purpose.

Science accepted the world as it found it without inquiring after any inner meaning that it might contain, and sought to formulate the laws of nature in some sort of orderly sequence. It interpreted the universe in terms of quantities that might be measured and classified.

Whatever judgments were arrived at by scientific methods were empirical. Science was not however immediately concerned with these judgments in a theoretical sense, but with their practical application. In the beginning it was limited to the accurate description and classification of the facts of nature. The significance of science lay in its ability to turn to some practical account the knowledge gained by its special technique. It was the application of this technique, its continuous improvement and ever-increasing efficiency, that was transforming man's environment.

The realm of science is the realm of ascertained or ascertainable facts, the world of factual reality as it was subsequently called, to distinguish it from the world of

metaphysical reality where religion dwells. Science was furthermore compelled to establish its claims to validity by exact knowledge. Exact knowledge was, however, interpreted as nothing more than quantitative enumeration. It meant confining within the limits of such enumeration those elements of nature that would lend themselves to this discipline. What could not be so confined, the unruly, exuberant forces of life, mind and the universe that refused to be quantitatively measured, remained beyond the knowledge of science, the unknown, and to some scientists and scientific philosophers even the Unknowable.

As long as a strictly mechanical interpretation and Cartesian dualism were adhered to, it was not difficult to select suitable elements that could be made to fit in with this scheme of things. In the process of developing its technique, science split the world of ascertainable facts into numerous compartments, like so many bee-hives where scientists were busy storing the new knowledge of nature and natural laws. This division of labour had an all-important influence on the development of science.

II

During the period when science flourished in Greece no attempt was made to build upon what had gone before. Every scientist in the Hellenic interpretation of the term, surveyed the whole field of knowledge from the beginning and added his mite to the store. But now with the reawakening of the scientific spirit in Modern Times all this was changed. The field of knowledge was soon seen to be too vast for any one man to explore; the field of experience was too complicated for any one mind to master. Thus it came about that not only was the general body of science split up into various sciences, but within

the more limited field of a special science, the succeeding generations took over the knowledge bequeathed to them, and only re-examined its premises in so far as they were found to be inadequate to deal with new problems. Within this relatively rigid frame, the possibility of the development and rapid progress of science was left open.

Scientific principles, unlike religious beliefs, were not held fixed and unchanging for all time, but capable of being abandoned, changed, remodelled, improved upon. In this way science was brought close to life. Its method became part of a living technique. One after another new spheres of human activity were explored and brought within the fold of science. First physics, then mathematics, then economics, psychology, biology, sociology and all of the other various bodies of knowledge were systematised according to scientific principles.

But from the outset science was held to be unable, unworthy to encroach upon the field of higher values or serve to interpret and explain the ultimate meaning of life. Art, religion, philosophy, shared the monopoly of spiritual values, which were by definition considered to be above and beyond the reach of science. Here scientific knowledge was of no avail; faith, inspiration, mystical enthusiasm had free rein. Science could not enter, so it was believed, lest it should act as a blight and destroy the beauty, the spontaneity, the fervour that are the especial characteristics of spiritual pursuits.

Excluded from all contact with the ultimate problems of life, its meaning, or its qualities, science was directed towards increasing material well-being by the subjection of nature and natural forces to the service of mankind. The scientific world view became identified with what is

known as applied science. It sought to devise a technique that was not only applicable everywhere, but a body of truth that was irrefutable owing to the concrete nature of its proofs. Nothing can better serve to illustrate the changes wrought by the application of scientific method than the attitude towards the treatment of disease.

III

Under religious sanctions medicine was a branch of ritual. The medicine-man among primitive peoples was endowed with a religious character. He effected his cures by incantations and charms, prayers and penances. Even in highly developed religions, such as Judaism or Christianity, disease was regarded as a form of punishment inflicted by God for misdeeds, whether of the sufferer or of his ancestors. All of the ailments to which the flesh is heir were held to be due to the direct influence of the divine purpose in the affairs of men; of supernatural origin, a manifestation of the power of God to punish, and his graciousness to heal. Or again disease was held to be caused by some malign influence, a personal enemy, a witch, a devil. At all events it was not a natural phenomenon.

Such was the attitude towards disease, even among the most enlightened minds during the Middle Ages, traces of which still survive in the superstitious fancy of some to this day. It was based on a religious interpretation of causation, which looks upon the Deity as the direct cause of all things good, bad and indifferent. Disease is thus closely linked with a theory of morals. Medicine can in consequence do no more than rely on magical methods of therapeutics.

When once supernaturalism is replaced by a system that looks to natural causes, we find that medicine frees itself

from religious control and becomes a field for scientific inquiry. Disease is no longer regarded as a punishment for sin. It becomes the object of empirical investigation. Diseases are studied as natural phenomena. They are shorn of all moral implications, classified and investigated in a spirit of detachment from the patient as a responsible agent, and as a result, the knowledge gained is applied in the treatment of a disease when it arises. The best way to overcome morbid conditions of the body, the fight against disease, its prevention as well as its cure, become problems of science. In this fashion medicine was freed from religious control and took its place among the sciences.

This example may serve as an illustration of how the body of scientific data was built up, how the biblical cosmogony was displaced, and an order of nature supplanted the order of God. But the nature with which science had to deal was believed to be made up of a fixed and enduring something called *matter*. Science regarded matter not only as devoid of all qualities, but assumed that the material universe occupied a definite position in time and space. Science was limited as we have shown, to a mere quantitative analysis and subsequently synthesis of matter. It could do no more under these circumstances than offer a description of a natural world, in itself purposeless and without value.

Men of science were chiefly engaged in looking for methods, for laws that would make possible the control over the forces of nature. It is the mastery of these forces that furnishes the long list of brilliant victories won by applied science. Science became identified with this relatively limited field of achievement. The harnessing of steam, of water power, the means of speedier locomotion, and all of the countless inventions that have

turned to practical account the forces of nature, served to give to man a sense of independence, security and power.

IV

Descartes, who stood on the threshold of the modern scientific world, had sought to prove that all living things, plants as well as animals, are mere mechanisms, actuated by material forces. He assumed *life* without making any effort to inquire into its nature and character. Following his lead, science for a long period rested content with this assumption and occupied itself with the mechanism of matter. Here we have the origin of this working hypothesis that was as rich in promise as it proved abundant in fulfilment.

As long as science concerned itself exclusively with the material universe from the standpoint of mechanism, and disregarded *life,* its significance was restricted to analysis, enumeration and rearrangement. It is not to be denied that during this period the body of knowledge based on ascertained "material" facts that was built up, was of great importance.

The first conquests of science were conquests in the realm of mechanism. In time it came to be realised that beyond mechanism there stretches a vast field of knowledge with which the mechanistic view is unfitted to deal. Modern science for a prolonged period not only ignored the existence of this field, but had cut itself off from any access to it by confining itself to a quantative interpretation of a rigidly material universe. No other course lay open as long as religion still had the power to block the path.

Religion, though displaced from its position of dominance in worldly affairs at the close of the Middle Ages, still retained control over the higher values of life. The

problems of life as such were left to religion as the special field of its activity. Life, its inner meaning, its origin and ultimate destiny, was, so it was believed, even after science had made great headway, too sacred to be inquired into. Life is a spiritual quality that in itself has nothing in common with the material universe. Thus the ministrants of religion ushered all men into and out of life, baptised and buried, as well as supervised moral behaviour during the earthly pilgrimage. Science, try as it might to investigate nature, to rearrange matter and give it new mechanical forms and even functions, could not, along the path it had chosen, penetrate the secrets of life. Thus life in its essence long remained outside the realm of science, the divine spark that animates matter.

Life, in so far as it was looked upon as something in itself, had at all times aroused great speculative interest. The religious world view had accepted life, as it did all other phenomena, as a manifestation of the grace, the power of God. The meaning of life was invested with supernatural characteristics that left no way open for its explanation from a natural standpoint.

V

Religion had from the beginning offered what we may term an artistic explanation of life. This artistic approach excluded, so it was held, any possible scientific interpretation. From the standpoint of the artist, life is endowed with imponderable, intuitive, supernatural characteristics that can be felt, but not understood. Art deals with a series of values that has nothing in common with the immediate problems of practical existence. It claims for itself a superior gift of selection from among spiritual values, and interprets life in terms of an emotional world, which has little in common with the world of factual

reality where science dwells. To art as to religion, the physical universe, the world we live in, is merely a means to an end, and nothing of value in itself. The world where the artist dwells, and from whence he draws his inspiration, is endowed with all of the embellishments of an unleashed imagination. Art and religion pride themselves on being at home in the higher world where inspiration is the only guide. Spiritual life is cut off from practical life by an insurmountable barrier, unless one borrows from the artist or the priest the wings to soar above it.

It was not until the decay of the religious interpretation of the universe, when art so understood, had told its whole story, and artists began to turn their backs on the world of God and His angels, that science could concern itself with the hitherto sacred problems of spiritual life. In fact Dante and Petrarch, Raphael and Michelangelo, Shakespeare, Cervantes, Bach, Beethoven and even Browning had to be in their graves before science could undertake to deal openly with the spiritual values of life.

Science now introduces a wholly new set of ultimate realities into the universe. Its values, though essentially spiritual, are altogether different from those of the religious world. Science frankly dares to question the truths of the religious world view, and seeks to interpret in intelligible terms what in the past had been the province of those who claimed direct means of communion with a world that lay beyond experience.

In the beginning science could do no more than strike root in the crevices and crannies of the crumbling walls of the religious world. Here it flowered for a long time neglected; while in the garden plots of civilisation, where religion still reigned supreme, and was, and to a certain

extent still is, held the nobler, the higher way, science was viciously plucked out as a destructive weed. As long as this condition of affairs lasted, as long as science was looked upon as an interloper, there seemed no way possible for it to interpret the higher values of life. Science might usefully study nature in a near-sighted fashion, but it lacked, so it was held, the far-sighted vision needed to deal with the broader problems of life. For life after all is something so elusive and imponderable. How could it be weighed in the scales of science?

VI

Though the individual was emancipating himself from the older, rigid, religious world view, and had been allowed free scope for self-development and self-expression, the influence of the massive religious tradition remained as a legacy that placed highest importance on the means of escape from the world of experience. Here art and religion joined hands. Artistic creation offered a way to an ideal world for those to whom the orthodox paths of religion seemed too steep or too difficult.

In the meantime the conquests of applied science called insistent attention to life in the world in which we live. With the help of science, life here and now was continuously being made more livable, more attractive, more secure. The secular world was winning for itself the first place in the thoughts of mankind in the West. The intellectual freedom that was spreading as the result of widening educational facilities, made it possible to appreciate the achievements of science. It was coming to be realised that religion had nothing new to offer, and that art with existing mediums could do no more than repeat itself.

Science could no longer disinterest itself in the problems of life. It was equipping itself to penetrate the

inner meaning of life; not satisfied to deal with matter, it was about to contemplate mind. It was making ready to apply its technique to the problems of life itself; to bring experience to bear in the analysis of the meaning of life, in order to oust authority from its last stronghold in spiritual life.

Life, it was now affirmed, could best be interpreted in terms of events which science was able to collate. But in order to do so the older, mechanistic view of matter had to be abandoned. The isolation and exclusiveness of the various sciences had to be broken down, and a sense of the unity of science built up. The religious interpretation of the universe had long since become insufficient. The scientific interpretation, if not in all particulars satisfactory, nevertheless offered a more valid method of approach to the problems of life. It thus came about that science in looking for the meaning of life discovered, in the first instance, mind. Here was a new world; a world still in confusion and chaos as the religious world view had left it.

Descartes had taught that mechanism applies only to the physical universe. Science should concern itself solely with this universe; mind lay beyond its province. Mind could not be dealt with mechanically, as in mind dwells that elusive something we call spiritual values. In order to deal with mind, science had not only to devise a new method and new instruments, but to establish a whole new branch of research.

Upon forcing the gates into the realm of life, science found itself confronted with the enigma of mind. To meet this contingency, psychology as a special discipline came into existence. As was only natural in view of the mechanical tradition that permeated the scientific world, mind was first studied as a mechanism that in some way

or other controls the body. Mind and matter were held to be entities, and in early psychology we have presented to us a series of mental faculties that science would isolate and analyse. Such was the psychological method that seemed most satisfactory to the thinkers of the 18th century. It dealt with the individual as an abstraction. It assumed life to be a singular phenomenon in which mind was a *tabula rasa,* a wax tablet upon which individual experience wrote the history of life. But this view was not destined to endure. Further scientific inquiry showed the fallacy of this individualist interpretation of life. A man's life was not an autonomous something. Hume had upset Descartes' interpretation of mind, and asserted that we have no experience of an individual self. "For my part," wrote Hume, "when I enter most intimately into what I call myself, I always stumble on some particular perception or other of heat or cold, light or shade, love or hatred, pain or pleasure. I can never catch myself at any time without perception and never can observe anything but perception." [1]

Hereafter psychology devoted much of its attention to discovering in so far as possible what these things perceived by mind are. Mind as something in itself makes way for the sensations, feelings, volitions that are registered there.

VII

It is not the place here to outline the subsequent development of psychology, which in time became one of the most important branches of science, in a great measure displacing philosophy in its older metaphysical aspects. In spite of his ever-increasing importance, the man of science was by his training averse to generalising. He was unwill-

[1] Cf. *Treatise on Human Nature,* Bk. 1, Pt. IV, p. 6.

ing to draw ultimate conclusions from the facts that he had learned. His was not the task, so it was believed, to select the relevant factors that could serve as a guide of conduct. Science had from the beginning been excluded from all participation in matters of morality. To the scientist the ultimate values of life were of no importance. He did not concern himself with questions of insight or circumstance, pleasure or pain, truth or beauty, or any of those elements that go to make up the higher values of life. He was content with his more humble task of bringing order out of the chaos of nature; formulating laws, drawing conclusions that could find immediate practical application.

Thus even after the psychological and biological sciences were in a measure systematised, the significance of science or of a scientific world view was neglected. Unlike the Greeks, to whom science was little more than a means of offering a plan of the best life, modern scientists left the teaching of morality under the guidance of religion or to those metaphysicians who, while making use of the conquests of the sciences, built upon them an essentially unscientific world view, and lost themselves readily, as did Hegel for example, in the hopeless verbiage of the *"O Altitudo."*

Such was the status of science down to the latter part of the 19th century when the theory of evolution transformed the significance of science. Hitherto science, in spite of repeated efforts to free itself, had been dominated by the mediæval religious interpretation of the universe. The doctrine of six-day creation was still accepted. Science had hitherto been excluded from even investigating the question. In their study of the problems of life and of mind scientists were always conscious that somewhere in the background there lurked an all-power-

ful Deity, ready to upset the best schemes of men. Though science had achieved remarkable results in the realm of mechanism, it could make no progress in dealing with life and mind as long as the doctrine of special creation remained.

VIII

The idea of organic evolution was not new. Aristotle had presented a very complete evolutionary hypothesis, and Lucretius painted a picture of the slow development of animal forms. During the 18th century evolutionary principles once again aroused the keen interest of intellectuals, and Goethe advanced an evolutionary theory that was in the main correct. But the first scientific attempt to prove the validity of the evolutionary doctrine was undertaken by Lamarck during the opening years of the 19th century. The ground was now cleared, and Darwin's *Origin of Species,* published in 1859, swept aside the doctrine of special creation. The last stronghold of religion had been stormed and captured. The triumph of the scientific world view was assured.

The very magnitude of the victory of science seemed for a time to overwhelm the conquerors. They paused, not knowing what course to pursue. All of the old landmarks had disappeared. All of the instruments of science had become inadequate. The old problems lost their importance. No one quite knew what to make of the situation; how to exploit the victory. The whole scientific scheme had to be recast. Materialism and mechanism with which science had been obsessed, were no longer needed. Even the dualism of mind and matter lost all significance. Matter, as a concrete fixed something, it was now discovered, was in the nature of an illusion, a figment of a primitive scientific imagination rather than

a basis for future research. In the same way, time and space were no longer stars of first magnitude in the scientific firmament.

What was to be the outcome? What was to be the new significance of science? What the meaning of life? What the place of the individual in the universe? Not since the days when Copernicus and Galileo shattered the belief that the universe was created for man, and launched modern science on its career of conquest, had there been such an epoch-making event as when Lamarck and Darwin destroyed the belief that man is an exceptional being, created in the image of God, for whom a life of eternal happiness in a world to come is the natural heritage.

It is not surprising that under the circumstances, bewildered by the change wrought in their outlook on life, the men of the late 19th century should have been unable to appreciate the broader implications of the new scientific world view and that for the most part scientists concentrated their energies on the further perfection of the technique of mechanical science. But already we may note a great difference in the place that science has come to occupy.

IX

Science is hereafter a career open to those gifted with the greatest natural abilities. We no longer find the scientist in the garb of a long-bearded alchemist, a first cousin to Dr. Faustus practising his black arts, and stumbling accidentally on important discoveries. The rewards of scientific research, especially along the lines of technology, are handsome. The scientist comes to occupy an honoured place in the community. He has become the oracle of the age. The progress of science is henceforth synonymous with that of an advancing civilisation. The

announcement of a new discovery in science or a new invention is hailed as a crowning glory, not only for the scientist but reflects credit upon the nation to which he belongs. No longer an interloper, science now occupies the choicest plots in the garden of civilisation.

In spite of all of these changes, science has not perfected a technique to deal with the highest values of life. Though the discoveries of science influenced conduct at every turn, and the benefits of civilisation that science afforded were recognised, no attempt was made to establish what we would term a scientific world view, that is, an interpretation of the universe and as a result a code of conduct that takes into consideration the fundamental difference between the new world of science and the old religious definition of the universe. This is not surprising in view of the fact that scarcely more than two generations have passed since evolution was first offered, as a scientific doctrine. Furthermore the harshness of the evolutionary theory in its early form of struggle for survival and ruthless self-assertivenes did not inspire confidence in the possibility of science taking over the control of the moral order. But this conception which dominated science until the close of the 19th century has now been abandoned.

The foundations of our beliefs are being recast. Industrious investigators in all of the special branches of science are busy with new definitions. No field is being left fallow. The functions of mind, no longer left exclusively in the hands of metaphysicians, are being tested by scientific method. A multitude of often seemingly contradictory theories, hypotheses, descriptions and explanations are being offered. Notwithstanding these contradictions there is an underlying unity pervading the whole field of science. For after all science is

nothing more than the most efficient handling of common knowledge, in that it would extend the field of knowledge to all the realms of life, leaving nothing unexplored. It would find for itself a home throughout the world. Science knows no fixed creed; to believe in the power of science requires no special stretching of the imagination beyond the realm of the intelligible.

X

Religion with its artistic approach to life is imbedded in ethnic, racial and regional peculiarities, which psychology has come to recognise. Thus there never has been and there never can be a universal religion. Science, on the contrary, and a scientific world view can find a place everywhere. Science knows no barriers of race or region. The spread of education, of a more intelligent interpretation of the phenomena of life, a higher appreciation of its intrinsic value, is all that is required.

Religion is by nature exclusive and intolerant. Science would give a fair trial to all systems of knowledge, seek the co-operation of every efficient agency that can offer a better solution to the problems of life. It would accept any and every method that can stand the rigid tests of experiment. Unlike religion which is grounded on tradition and requires a dogma that can be appealed to as sanctioned by some divine, some supernatural authority, science offers the possibility of growth, change or adaptation to any and every condition. It requires no special place of worship as the influence of science and the application of its methods permeate the whole of our active existence. The wonders that science performs have reference to no occult powers, and once the method is perfected can be repeated over and over again, without possibility of failure. The marvels that science

reveals seem far more "miraculous" than those that persuaded the early followers of Christianity to embrace the new faith.

It is an error to hold that science is of necessity abstract, that it can deal with life only after devitalising it; that it is not capable of grasping the rich sensuous qualities of living experience. Such a criticism was in the past justified when science was burdened by its exclusively mechanical and materialist hypotheses, when it was only deemed competent to measure and classify. This view is no longer tenable. Science is making ready to interpret the whole story of life.

A new conception of the part that science is to play in the world is taking shape. The old mechanistic theory of the universe has broken down. The duality of mind and matter has gone by the board, dragging with it the orthodox conception of space and time. What all these changes involve may not be wholly clear to us, but of one thing we may be certain; science is making ready to take over the sole control of life. It has uprooted the last remnants of the religious world view. It is revealing a universe freed from the terrors of the supernatural. It is laying the foundations of a concrete world unity that rests directly on the new industrial economy. Already by the application of the scientific technique the peoples of the earth are to-day bound by closer physical ties than was ever possible in the past. The time is not far distant when a similar spiritual unity may be expected to take shape, as we come to understand the true cultural significance of science.

CHAPTER III

The Values of Science

I

THE present imperfect state of our understanding of the full implications of science should not deter us from seeking to estimate their historical importance. The scientific world view is introducing a new scale of values into social life. Though the World War may serve conveniently to mark the turning point, the causes of the new social outlook are to be sought elsewhere. We shall discover them in the influence of science in moulding our code of conduct. It is only if we take this new factor into consideration that we can gain an insight into the social aims of our times. Here we come upon a radical break with the past.

Historians are inclined to harp upon the continuity of history, and can bring what appears to be satisfactory evidence to bear, to show that people depart but little from the ways of their ancestors. They cite for example our division of the day into twelve hours, as was the practice in Babylon, or our mile as the thousand paces of a Roman legionary. Yet these same historians mark off history into definite periods, Classical Antiquity, the Middle Ages, Modern Times. They link these periods up with the rise and fall of nations and of state systems, and would deduce therefrom a change in the direction of the course of civilisation.

Recently much attention has been paid to the part played by the degradation and decay of social institutions. A Spengler arranges world history into mathematically symmetrical cycles of fourteen hundred years, and proves to his own satisfaction at least that we are at the end of such a cycle, and that Western civilisation is doomed. Others such as Dr. Rivers, Mr. Elliot Smith and their followers show us that in North America, Oceania and Indonesia the earlier forms of civilisation were more advanced than those that came afterwards. Great pyramids may degenerate into earthen mounds. "Going backwards in time in America is like the ascent of a series of cultural steps, at the summit of which stands unchallenged the earliest of all, that of the Maya." [1]

Assuming that this view of the degradation of institutions is correct, are we justified in asserting that a scientific world view is a more primitive form, and that science is a degradation of a religious world view? Are the higher spiritual values inextricably bound up with a religious interpretation of life? Can they find no place in the world of science? The question is an important one. What is the nature of the historical evidence that may be brought to bear?

[1] Cf. W. J. Perry, *The Children of the Sun*, p. 421. Elliot Smith suggests that "the acts which the earliest 'gods' were supposed to perform were not at first regarded as supernatural. They were merely boons which the mortal rulers were supposed to be able to confer by controlling the waters of irrigation and rendering the land fertile. It was only when his powers became apotheosised with a halo of accumulated glory (and the growth of greater knowledge revealed the insecurity of the scientific basis upon which his fame was built up) that a priesthood, reluctant to abandon any of the attributes which had captured popular imagination, made it an obligation of belief to accept these supernatural powers of the gods for which the student of natural phenomena refused any longer to stand sponsor. This was the parting of the ways between science and religion, and henceforth the attributes of the gods became definitely and admittedly supernatural." *The Evolution of the Dragon*, p. 32.

II

As far as is now known only once before in recorded history do we find what we may term an age of science. In Greece from the fifth to the second century B.C. science flourished. It influenced and determined social precepts though it never manifested itself to any marked extent in practical affairs. To the Greeks science was in no way bound up with a desire for life as we find it to-day. Though a scientific approach to the problems of existence and to a good life led them to discover many profound empirical truths, no technique was ever devised to exploit these truths or to turn them to practical account.

Like primitive religion, which is unethical, primitive science in its Hellenic interpretation, though it was able to bridge the gap between ethics and science, was never able or inclined to cross it. The causes for this are not far to seek. If our hypothesis is correct, that a given cultural level and its attendant moral code rest upon the economic system in force, it will be seen that the economy of Greece during this first scientific period rested on the foundations of a relatively primitive slave economy. The routine of Hellenic life was restricted to the productive capacity of this economy.

It was thus possible for the Greeks to describe the stars in their courses with no little scientific insight, but they never bethought themselves that telescopes were needed to confirm their hypotheses. Hippocrates might outline scientific ideas about disease, but it never occurred to the Greeks to devise scientific methods of treatment, as the economy of the age did not offer the necessary technical facilities. Aristotle could teach a doctrine of evolution, but it was not until more than twenty-two centuries later that it first occurred to the scientists of

our own times to establish the validity of the theory of evolution by recourse to a scientific observation of facts.

The science known to the Hellenic world was in its technical aspects primitive in the extreme, intimately related to the stage of development of economic life. But there prevailed that sense of intellectual freedom which is a first requisite of scientific speculation, and without which science cannot live. The most important and lasting contribution of this first age of science was a group of theoretical moral sciences which, though destined to make way for the rise of religious morality, was never wholly lost sight of. The intellectual freedom which the Greeks enjoyed was displaced by the rigid mental discipline of Christianity which precluded any and every effort of the human spirit to find its way in the world of nature. Nevertheless, before the close of the Middle Ages we may see evidence of a reawakening of the faith in science to explain natural phenomena satisfactorily. The spirit of science never wholly died. It lay dormant in the West for more than fifteen centuries.

Modern science is in a sense an outgrowth of the Hellenic scientific world view. Yet it is a mistake to seek to link it too closely with this past. Descartes at the beginning of the scientific age instinctively felt this. His effort to break with the past, not merely with the mediæval, but also with the Aristotelian tradition, shows that modern science had a different purpose in view from that of the preceding scientific era.

III

Science in Modern Times, whatever its antecedents may be, whatever its limitations and inadequacy, is now recognised as the great impulsive agency in the development of the best life. When during the 19th century the

doubts as to the validity of the scientific world view were being removed, the thoughts of men that had grown stereotyped and conventionalised were freed from the last vestiges of religious bondage and were in a position to investigate not only the material universe but mind itself.

Science is creating a new scale of values. We find in the first instance an intimate relationship between the application of scientific methods to the means of production and the ubiquitous spread of science during the past half century. In other words, the economy of the new age, which is grounded on a scientific hypothesis and makes it possible to bring accurate evidence to bear in proof of the claims of science, is in turn enriched by the fruits of scientific research in the realm of ascertainable facts. We have thus established a co-ordination of purpose that, while enhancing the value of science, in social life makes for continuous improvement in the methods and means of industry to satisfy, by the creation of an adequate technical equipment, the exacting demands of science.

A principle of necessary connection has been firmly established by science in the world of factual reality, and science refuses to take cognisance of any other. What this may mean in forming new ideas of value is becoming a chief preoccupation of science to-day. But it is not the connection between events that is so important, as the events themselves. Every step forward in science confirms the need for going beyond the staked-out claims of the scientific dogmas that have hitherto prevailed. Thus the values with which science would deal are no longer limited to a natural universe, no longer restricted to a one-sided interpretation of this universe and unable to account for morality in the world. The scientific world view of to-day would seize hold of the mobile, changing,

growing elements in life as the source from whence all values flow. It thus comes about that science finds itself confronted with the task of revising the established principles of a rigid three-dimensional material universe. Time, space, mind, matter are being tossed into the retort, and a new scientific world view is being distilled.

We are not immediately concerned with the various hypotheses of time-space, with the quantum theory, the doctrines of relativity and emergence, with the ideas of energism or vitalism. What we would point out is that the scientific world view is for the first time finding room for the idea of quality. Place is being made for the individual in the world of reality. Science, no longer concerned solely with the objective aspects of nature, conceived of as a world apart, having its own scheme of relations that may only be quantitatively determined, would admit man, the individual, the subjective self, man's moral code, into the scheme of things.

Science is finding for mind a place in the natural universe. Mind is the quality element in the natural process. In consequence the quantitative importance of materialism in science is declining, and the qualitative interpretation introduces the individual mind as the organising force in the world.

IV

Though the place of mind in nature is still far from secure, and it is the problem of the immediate future to establish the validity of its position as the factor that gives to an event its uniqueness and value, nevertheless we can already discern some of the more important effects of the acceptance of a scientific world view on the scale of values.

Hitherto religion claimed a monopoly of all of those

values most highly prized by mankind. Religion asserted for itself the exclusive right to determine the sanctions of morality. In return it offered a channel of approach to a better, nobler life that, so it was claimed, lay beyond and above the events of earthly existence, which were regarded as having no value in themselves. Religion discounted events and laid emphasis on a higher purpose to be revealed through worship of the deity. "Begin by taking holy water," wrote Pascal, "and you will end by being a believer."

God, the Heavenly Father, ruler over this world of ours, allotted a span of life on earth to the individual. As long as science could not penetrate the mystery of natural evolution, the doctrine of special creation in a measure kept upright the whole religious scheme of things. But once the evolutionary theory was confirmed, the older religious conception of space and time, of mind and matter as well as of the Deity, had to be revised.

Value is henceforth no longer conferred upon life by the caprice or the will of God. It is inherent in life itself. The events of life now emerge as matters of principal concern to science, the bearers of those qualitative characteristics which we find mirrored in mind. A place is thus found in science for individual experience within the broader sphere of social experience. A life is a value in itself, but not for itself. The individual life offers a pattern of moral values in continuous flux and change, but like the drop of water in a wave that ever remains nearly in the same place though the wave itself crashes towards the shore with swirling speed, so the individual values in the sea of social life remain relatively constant. Here a degree of permanence is attained that makes it possible to transcend the apparently disruptive, transient character of experience.

Science takes cognisance of value in an event as its enduring quality. In order to do so the older notions of *now* in time, and *here* in space, have to be discarded. For these are mere quantities that adhere to matter. With a universe so limited the new scientific world view refuses to deal. It belongs to the old biblical cosmogony that for so long obsessed science. It deals with a world of objects rather than with their history. It refuses to recognise that existence implies a history of some sort, and that it is in history that qualities emerge that may be grasped by mind.

It is futile to seek to distinguish between an object and its history. It is the history of an object that concerns us in our effort to determine value. An object shorn of its history, if this were possible (and science is showing us that it is not), would be a mere mechanism in the Cartesian sense. In this way individual life with its qualitative richness and sensuous instability finds a place in the scheme of events as having a history.

The problem that now confronts science is to offer some means of organising into a coherent whole the qualitative aspects of nature. Science tends to free the individual from his environment, to give him a biography of his own, and at the same time include him as part of the broader social history. Quality as we have seen, makes for the uniqueness of an event which distinguishes it from all other events. It is the history of events that reveals the qualitative difference that lies at the bottom of any and every estimate of value. We would here inquire very briefly into the scale of values of science.

V

Value in the usual sense of the term involves a system of relationships between an individual self and a thing.

In the simplest way of putting it value results when on a given quantity or thing, a quality is conferred in the mind of someone. Thus value is a creation of mind. It is in the field of values that mind reveals itself as truly creative. Here quality comes into existence. Quality is external to quantity but readily becomes identified with the latter, and its mental origin is lost sight of. This transfer is most easily accomplished, and quality becomes inseparable from quantity in the realm of economic values. Here the aspect of value appears as complete in itself. Quality is so intimately bound up with quantity that the mental character of quality is discounted. Economic values are measured in material units. Wealth thus readily assumes a peculiarly physical significance in which the material aspect bulks large.

As we retrace the historical development of economic values, we find that first local, then regional, then national, finally in our own times under the guidance of science we are formulating the principles of a world economy. This development takes place in direct proportion to the means of production and distribution available. A given civilisation is dependent upon the stage of development of its economy. It cannot go beyond this economy. But this is far from the same thing as asserting that economic values include the whole scale of values. On the contrary they are the crudest and most primitive factors in this scale. It is as idle to disregard them and to separate them from the so-called higher values of life as it is to declare that they tell the whole story.

No one can contemplate our present system of industrial organisation and its astounding mechanism of world transportation, credit and exchange without realising that here we have a broad basis upon which a rich and fecund civilisation may flourish. In this civilisation science is

destined to play the dominating rôle. Here we see a new principle introduced into human affairs. The scientific ideas of modern hygiene, medicine, education, efficiency and organisation, are now looked upon as the natural heritage, not only of the peoples of the West, but of mankind. Here we discover some of the elements of the new scale of values.

It is not surprising that the peoples of the present age are placing reliance in the new-found industrial powers revealed by science. It is to science that we turn when we would look for further enlightenment. Science is the pillar of fire that is lighting the way through the wilderness of life. But science is something more than a mere instrument to be made use of to increase our power over nature. It is intrinsically good in itself. It is creating a new standard of morality of its own.

VI

It may be an interesting pastime to compare the modern age of science with that of Greece. But it can only serve a useful purpose in showing how far we have travelled, how different is our scientific world view. The intellectual brilliance of Hellenic civilisation, which has dazzled so many, is still held by some to be the height of creative perfection to which we may not even hope to aspire. The fact that science as known to the Greeks suffused a glowing radiance over the life of the times is not denied. But Hellenic civilisation, even during its most flourishing period, was a microcosm. It affected only a very small community that was exclusive, egocentric and self-regarding. At the same time we must not overlook the fact that during this age of science the fine arts flourished and reached the highest stage of perfection known in the West. Here is illustrated the spiritual

effect of a scientific world view, rich in promise for our own future. When once again science becomes the source of passionate emotion, as it was to the Greeks, may we not also expect a flowering of the creative spirit in the fine arts?

In the meantime there is danger in looking backward. We have come to the parting of the ways. During the past three centuries science was still overshadowed by the last remnants of a religious world view. It is only in our own times that we are being freed from religious prejudice. It is not to be wondered at that most of us have not caught up with the times in which we are living. We accept the benefits conferred by science, we pay homage to its achievements, but dismiss it as inadequate to show the way to the higher values of life.

Religious traditions still survive amid our modern, scientific surroundings. Though increasing numbers among the clergy are preaching the doctrines of science from their pulpits, and unwittingly undermining the validity of religion, others, the larger part, are still thundering about the crass materialism of science. As a matter of fact science has discarded the materialist hypothesis inherited directly from mediæval theology, and is concerned with a world of events, with emergent qualities—in short with spiritual values that put to shame the traditional materialism of religion that accepts the orthodox system of heaven and hell.

In the light of science it is religion that appears to offer a limited, materialist world view, devoid of spiritual significance. The world of God in Heaven is at best a puny world of thrones and powers when compared with the infinite expanse of the universe that science as yet can only fragmentarily outline. "From the science of astronomy we learn that the earth upon which we live is one of

the smaller of eight planets revolving around the Sun. And it is relatively near the Sun for its distance of 93,000,000 miles seems little when compared with the distance of the outer planet, Neptune, which is about three thousand million miles distant from the Sun. . . . The universe has perhaps one or two thousand million stars, each one of which may be a sun like ours, and conceivably might have its own planets." [1]

VII

A higher value placed on human life, a worth while quality in events, as well as a place for individual growth and development are inherent in the scientific world view. Science is introducing a new sense of human dignity and social responsibility into the chain of existence. As never before do we realise that we are masters of our destiny, that we can in a greater degree than ever was possible in the past, realise the full implications of moral action. It is from science that we have learned that good and evil, pleasure and pain, happiness and misfortune, are not due to the intervention of some unseen God. It is by turning to science and not to religion that we now seek to discover a solution of most of the problems of life.

If hitherto the spiritual values of science have been neglected and their existence even denied, this is due in a large measure to the strictly materialist interpretation which for so long has dominated science. No one would belittle the vast achievements in this field. It is upon the foundations of physical science that the modern world has been built. But this does not preclude the possibility of a deeper, broader understanding of the spiritual rôle of science. Man, having transformed his environment, will now have the leisure to apply the methods of science

[1] Cf. C. T. W. Patrick, *The World and Its Meaning*, p. 60.

to himself. Already science has left behind it an exclusive concern with physical problems, and is seeking to penetrate the spiritual universe. It would concern itself with the baffling problems of life and mind.

The mediocre and insufficient nature of the interpretations of life offered, the inadequacy of pragmatism or neo-vitalism, the exaggerations of psychoanalysis or the crudities of ideas such as those of the racial supremacy of the Nordics, should not blind us to the important developments that are taking place in giving to life a value of its own. Mind is becoming secularised, and if in the process God is being reduced to the vanishing point this does not mean that what hitherto has been called the god-like in man has been excluded from the world of science. On the contrary the opposite is the case. As never before has the best of life been offered so widely, so generously, so abundantly.

Anatole France once wrote, "There is no more valid proof of the non-existence of God than life." Though the French satirist was seeking to prove his agnostic position by pointing to the suffering in the world, we could turn his meaning about and show that *life* no longer requires the existence of a God to explain its wonders, or interpret its disasters. Modern science makes no room for God in the accepted sense of the word, but this is far from meaning that the secular world is henceforth to be shorn of all that is good, true and beautiful. Science is being endowed with spiritual characteristics, is working out a new moral code that has no need of a supernatural deity to give it value. For science recognises that the ultimate values of existence are embedded in life itself, are a part of this life, and that the living of it has a high value of its own.

Science, in displacing religion is making more ample

room for all of those spiritual values which hitherto were included in the all-embracing mysteries of the divine. The so-called "insoluble questions of our own fate" that haunted men of science such as Herbert Spencer, and led them to set apart a vast field as the eternally Unknowable, or take refuge in authoritative dogma, are rapidly losing all significance.

Science is no longer exclusively concerned with merely physical problems, bounded by fixed dimensions of space and time. The transcendent factor with which it deals is life. It would teach that there are no higher values than those of life itself. The quality that distinguishes human life outside of its merely mechanical aspects is mind. Here we come upon the source of all spiritual values, which as a basis of moral action for the first time in history find a place for themselves within the orbit of life, as a natural part of it. Life is the permanent scene where mind gives its dramatic performance.

VIII

Historical research, so eager to discover the continuity of events, has hitherto failed to grasp the underlying unity of life itself. We see in history a series of civilisations that differ one from another in physical aspect, but are in other respects strikingly similar,—a striving to devise a method of adaptation and adjustment to environment in keeping with the economic development attained.

Every civilisation adds something new, a scale of values that marks it off from all that has gone before. This is a slow cultural process, possibly as slow as that of the evolution of physical characteristics. At all events, however late in maturing, once matured, history recognises in this scale of values the stage of civilisation reached.

In this way it will be seen, to cite but one example, that

for a thousand years Christianity spread slowly westward across the wilderness of Europe, building up a religious world view and endowing life with its especial scale of values. We are now at the top of the Christian slope at the close of the Middle Ages.

The beginnings of a new world view are already foreshadowed in the 13th century, in the speculations of Roger Bacon, and many another obscure seeker after a scientific pathway to truth. Science did not dare to come out into the open until three centuries later, and we know the fate reserved for Galileo in the 17th century had he not recanted. In the meantime new economic foundations were laid, upon which the scientific world view could rest more securely. During another three centuries from the 17th to the 20th we may watch the increasingly rapid growth of physical science until in our own times the economic technique of industrialism has made possible the triumph of the scientific world view. The need for a religious interpretation of life was vanishing.

We may compare this age of ours with that of which Flaubert wrote, "The gods being no more and Christianity being not yet, there was between Cicero and Marcus Aurelius a unique moment in which man stood alone." In this sense we to-day are standing alone. We may be unable to formulate a plan to achieve a unity in life between the qualitative and quantitative, the psychological and physical, the material and spiritual aspects of truth that science offers. But of one thing we are certain, science is making ready to satisfy, not merely the logical and physical, but the emotional and psychological needs of mankind. For in the scale of values of science there is a coherent place for life itself in this world of ours. And while we may agree that life refuses to submit to

limiting formulæ this does not mean that we cannot capture and make use of the qualities with which life is endowed by mind, as well as the quantities by which it may be classified and measured. If we do so we will find that there is no need of deducing a creator from the thing created. For after all in a strict sense "God" denotes nothing more than a quality, is another name for the quality aspect of life.[1] In a scientific world view the term becomes superfluous but the quality it denotes remains as part of a new synthesis.

As long as science was unable to find a place for spiritual values it remained inadequate and fragmentary. We are still waiting to discover the way to unite the world of events with that of values; the world of appearance with that of mind. In the meantime we can already see that the place that religious thought ascribes to God as the Providence of the world, science shows belongs more properly to the human mind which gives to the world of events its characteristic quality. The divine Providence of a religious world view is being replaced by the efficiency of industrialism.

[1] "When the rationalists converted the term God—Θεος—which is properly an adjective, a quality predicated of each one of the Gods, into a substantive and added the definite article to it, they produced 'the God,' the dead, abstract God of philosophical rationalism, a quality devoid of personality." Unamuno, *The Tragic Sense of Life in Men and Peoples.*

CHAPTER IV

The Scientific Economy

I

THE foundation of civilisation is economic. Whatever the level of culture, religion, art, science or virtue attained by a given social group, it is intimately bound up with the sources of its income, its material well-being. In a primitive society economic pursuits are related to and take precedence over all other activities. Then as by degrees food-gathering becomes less arduous, leisure moments are turned to other tasks, and the creative impulse manifests itself in various forms that have no practical purpose immediately in view. Art, science, religion—a scale of values take rudimentary form, and a civilisation arises which looks directly to the means of production upon which it rests as the source of its life-giving leisure.

As long as a given economic system is able to afford an adequate margin of leisure to meet the spiritual longings that have been awakened, no change of civilisation takes place. But once the existing economy proves itself to be inadequate and no longer offers possibility of further growth, a civilisation decays.

History shows a long list of civilisations that have prospered only to disappear completely, leaving in some cases little or no trace. We have in a preceding chapter [1] dealt in some detail with the more salient aspects of the

[1] See Book I, Chap. III.

economic system upon which the religious civilisation of the Western world was built. We have pointed out the changes wrought in this economy as a result of the important part that wealth came to play after the Reformation. Here we see the first feeble beginnings of the new scientific economy, which in our own times has grown to full stature, replacing the older economy, and in consequence displacing the religious world view. We would set forth some of the more essential features of this new economy upon which the civilisation of the coming age will rest.

II

As we climb the ladder of civilisation we find that material prosperity and well-being are directly related to the flexibility and security of the system of transportation, credit and exchange in force. At the same time the painful drudgery entailed in production declines in proportion to the introduction of machinery and machine tools. It is here that the services of science were first enlisted in Modern Times. Science pointed the way to increasing production, accelerating transportation, facilitating exchange. It is the application of the methods of science to the problems of increasing the store of wealth that made possible the rise of the new economy which was in time to lead to a new world view.

When during the 18th century the authority of religion was being undermined, and was receiving blows from which it was not destined to recover, the new economic system that was taking shape was making use of the discoveries of science that were to change the whole aspect of the modern world. While Voltaire was busy writing his biting satires, scoffing at religion, making the Bible

stories the butt of his polished wit, the last vestiges of the older religious economy that still are discernible in the mercantile system were being finally discredited.

The Physiocrats in France, Adam Smith and Jeremy Bentham in England, were laying the foundations of the new science of political economy. It was this same age that saw the rise of the factory system and the industrial revolution which, with the introduction of machinery, was destined to displace the last survivals of the mediæval methods of production.

The industrial revolution was the result of the introduction of the factory system in place of the existing domestic system in industry. This change was due to the application of the methods of science to the problems of production. Scientific inventions transformed the technique of industry. It is men like Kay, Arkwright, Watts and Bolton who first turned to practical account the lessons of physical science.

The economic importance of the mechanical inventions of this and the succeeding epochs cannot be overestimated. "These serve to explain the world in which we live, with its busy cities, its gigantic factories filled with complicated machinery, its commerce and vast fortunes, its trades unions and labor parties, its bewildering variety of plans for bettering the lot of the great mass of the people. The story of the substitution for the distaff of the marvelous spinning machine with its swiftly flying fingers, of the development of the locomotive and the ocean steamer which bind together the uttermost parts of the earth, of the perfected printing-press, producing a hundred thousand newspapers an hour, of the marvels of the telegraph and the telephone,—this story of mechanical invention is in no way inferior in fascination

and importance to the more familiar history of kings, parliaments, wars, treaties, and constitutions." [1]

Under the impetus of the new economy the nature and character of social life were transformed. Here we have the origin of those vast changes in political organisation that took place at the close of the eighteenth century in the wake of the American and French revolutions. It is not claimed that this was the conscious purpose of those who fought for "life, liberty and the pursuit of happiness." But rather that the new economic foundations of society inevitably entailed a change in the older state system, which was still hampered by many of the traditions of the religious world view.

The transformation that took place is clearly shown by the fact that the pursuit of wealth is now confounded with the pursuit of happiness. Happiness in this economic sense became the high goal of man's endeavour. To be free to enjoy it, was his first purpose. Thus production for profit took the place of production for consumption. Trade and commerce, it was now openly acknowledged, were matters of first importance. Adam Smith had formulated his doctrine of economic freedom, and demolished for all time the fallacies of mercantilism. As a result the owners of the instruments of production gained autocratic control over industry, as well as over the workers engaged therein.

Wealth came to be recognised not merely as an end in itself, but as the value upon which all other values depend. The older religious economic doctrines of moderation, the Christian vows of poverty were discredited. In the new political economy, poverty no longer a means to ecstasy, meant spiritual degradation. Attention was

[1] Cf. Robinson and Beard, *The Development of Modern Europe,* Vol. II, p. 31.

now for the first time called to the poor, who under the factory system were being ruthlessly exploited.

The abject misery of the workers, the unsanitary conditions under which they worked, the long hours and starvation wages which was the common lot of those engaged in industry, raised a new problem with which political economists were unfitted or unwilling at the time to deal. Here were sown the seeds of industrial unrest that characterised the economic life of the 19th century. Here we have the origin of the long list of social questions, of socialism and communism, and of the demand for the abolition of private property that still confront us to-day.

III

As a natural consequence of their control over the means of production the middle class also gained control over the State. Political action was directed to serve the needs and aims of the economic principles sympathetic to the egoistic, self-centred materialist outlook on life of the governing middle classes. It thus came about that under the new economy in order to increase production, not only did they harness steam and steel, but they devised the division of labour, which while it greatly accelerated the productive speed of the workers, made of them wage slaves. It was only natural that the political economists such as Ricardo and John Mill in developing the doctrines of Adam Smith and Bentham, should have come to look upon the worker as a mere economic unit. This idea fitted in neatly with the mechanical views which science had adopted and was so successfully exploiting.

Thus the economists of the early 19th century set forth that human labour is a commodity that is to be organised and exploited just like any other mechanical

device. Out of the principle of exclusive egoism which was the natural corollary of the utilitarian doctrines that now spread so widely among the middle classes, came the idea that thrift and saving are virtues of the highest order. It taught the new magic of money, that "money can beget money," and that it is the duty of every self-respecting citizen to get as much of it as possible. Such are some of the more salient features of the first effects of the political economy that replaced mercantilism.[1]

It was in England that the industrial revolution first made itself felt. Here the adoption of the new economic code led rapidly to prosperity and power, which without much regard for the facts in the case were ascribed to the parliamentary system of government in vogue there. It thus came about that this form of government became the pattern and model which all other peoples sought to imitate.

The French Revolution spread the doctrines of constitutional liberty throughout Europe. It cleared away the last remnants of feudalism and made possible the unhampered spread of the new doctrines of wealth, work and wages.

It is not surprising that in the violent reaction against the older religious world view an effort should have been made to supplant the old forms of worship. The cult of the Goddess of Reason, inaugurated during the French Revolution, is characteristic of the times. This attempt to do away with Christianity was destined to failure as it was premature. Religious tradition was still too strong. But it reveals what was at the back of men's minds. It shows that they vaguely felt if they did not understand that the new economy that was being formu-

[1] See p. 44 *et seq.*

lated had nothing in common with the older religious economy.

It was no longer the authority of God but the opinion, the experience, the efforts of men that were to count. Public opinion, progress, reason were to be the chief ingredients of the new world view. The rights of man, the sovereignty of the people, the will of the majority; self-expression, self-help, self-government were some of the terms now loosely used to cover a multitude of half-baked ideas and ill-digested notions that became current. They were applied without discrimination to political as well as economic problems.

IV

The frank avowal of the importance of economic activities became a commonplace. Poverty was looked upon as an unnecessary servitude which it was the moral duty of every self-respecting citizen to overcome. Progress and perfectibility through one's own efforts became the gospel of the new economy. The optimism engendered by the acceptance of the idea of progress during the closing years of the 18th century was the result of the reliance placed on science to alleviate all human ills. It was an age when Condorcet could in his *Sketch of the Progress of the Human Spirit* proclaim, "Nature has indissolubly united the advancement of knowledge with the progress of liberty, virtue and the respect of the natural rights of men." He foretells "the moment in which the sun will see free nations only, acknowledging no other master than reason; in which tyrants and slaves, priests and their stupid and hypocritical instruments will no longer exist save in history and upon the stage."

Political economy was thus at the outset linked with the idea of progress. Progress became an end in itself.

But it was interpreted exclusively in terms of quantity. Progress was measured to the satisfaction of all by a statistical comparison of units of wealth, of quantity of goods produced, of numbers of factories, spindles and looms as well as of workmen employed. It was by the application of the lessons of science to the means of production that progress was possible. It was by the perfection of the technique of the factory system that increasing output and lowering cost of production met the active competition that was growing up. This meant in time the need of finding new markets as well as new sources of raw material.

We cannot follow here the political and social changes which are directly traceable to the transformation of economic life. For the first time in history economic questions were becoming the principal concern of all classes of society in the Western world. There were none too high, none too low in the social scale not to feel in one way or another the pressure of industrialism. Trade and commerce now came to dominate public as well as private affairs. Though the middle classes prospered and grew daily richer and more powerful, the new economy was far from advantageous to the working classes. Conditions of work, hours and wages under the unregulated factory system of the early 19th century were almost the worst ever known in history. In comparison the position of the villein in the mediæval economy appeared to be far superior. It was not long before attention was called to the latent injustice of a system that could tolerate such exploitation of the workers.

Here we come upon the weak point of political economy. It was based on ideas of individual responsibility that had been left as a heritage by the Reformation. Every man was to have a right to do as he pleased with

what was lawfully his. The code of political morality—if we may call it a code as it remained to the end unformulated and chaotic—laid greatest emphasis on individual privileges and prerogatives. Private rights had come to be held sacred. Man as an enfranchised member of the body politic was regarded as complete in himself, self-sufficient in every respect and endowed by nature with inalienable rights. To be a member of the electorate was an exclusive privilege that was based on a property qualification which excluded the working classes, who thus had no representatives of their especial interests in a government which was by definition representative of all the people.

The electorate held the balance of power. By a fiction never clearly enunciated, and perhaps for that reason the more readily accepted, a compact between the governing and the governed was presupposed, whereby the governed gave to the governing the powers that the latter exercised. In consequence the governing body was only permitted to interfere in a specifically defined category of instances in the private affairs of the governed, as set forth in the constitution. It is characteristic that the constitutional liberties granted to the people, which were hailed with such pæans of praise as the millennium of political freedom, were in fact so framed as to extend and increase the growing power of the middle classes, without any regard for the economic servitude of the poor. For a long time thereafter the right of governmental interference to redress the wrongs of the working classes was even denied.

V

The older spirit of co-operation that had governed trade and commerce under the religious economy, was

now replaced by intense competition and ruthless exploitation of the workers in industry. The pursuit of wealth became the dominant interest of the majority, as every one was now in theory at least free to do as he pleased. Science was enlisted in order to devise new and more efficient means of production, to increase output. The triumphs of mechanical inventions made of science the chief auxiliary of the new economy. It is in economic life that the influence of scientific method first made itself felt. The new technology developed was the most important contribution of the 19th century.

Science became the instrument of industry. Its influence penetrated slowly and unnoticed, for the new scientific world view was hidden beneath the mass of mechanical appliances which were transforming the character of social life. The whole world was being drawn more closely together. The new methods of transportation and communication brought about a change in the accepted notions of space and time. But no conception of these influences in other than purely material aspects was thought of. Men were too intent upon perfecting the new mechanism of industrialism to have time to draw any general conclusions. It sufficed to note that science was the watchword of those who placed their faith in progress. The emphasis was on progress, not on science, which was looked upon as a mere handmaid.

As was only natural, science was now appealed to by those who investigated the condition of the workers. Scientific socialism, as the powerful Marxian doctrine came to be called, sought to apply the new methods of science to problems of production from the standpoint of the workers. Marx called to his aid the arguments of history, and claimed to be able to prove scientifically that the historical sequence of events required that in

due course the workers should themselves own the means of production, and establish their control over society through the dictatorship of the proletariat.[1]

We are not here immediately concerned with the details of Marxism. What is important for our purpose is to note that appeal is made to science as the ultimate arbiter in social relations. In the same way Comte, in announcing his doctrine of Positivism, proclaimed that Western civilisation was standing on the threshold of an age of science. But his futile efforts to give practical application to his doctrine by founding a "Religion of Humanity," which in many of its aspects was little more than a feeble copy of the fixed hierarchy of mediæval society, shows us by his use of the word *religion* that he misinterpreted the meaning of science.

Both Comte and Marx as well as their followers, while awake to the rising importance of science, were still wholly ignorant as to its social significance. They did not understand that a scientific world view rests on altogether different foundations than those of religion. As long as the materialist interpretation of science prevailed, little could be accomplished except along lines of perfecting the technique of production and organisation.

VI

The new scientific technique as applied in industry brought in its train radical political changes. The growth of industrialism, which was a direct result of the application of the methods of science in economic life, was transforming the State. The older exclusive nationalism was beginning to break down as international socialism and world trade brought to the fore ideas of world unity

[1] For a fuller discussion of the Marxian doctrine along these lines see my *Trend of History*, pp. 157-171.

and humanity. The orthodox doctrines of political economy, based on the classical maxim of *laissez faire,* were being rejected. It was now claimed that it is the first duty of the State not only to protect, but to promote the economic interests and welfare of its citizens.

The increase of wealth and material well-being, the rising standard of living, which we find at the close of the 19th century among those peoples who had adopted industrialism, are directly traceable to the influence of scientific methods. Never before in the history of the world do we find a period of greater prosperity. Though governments were slow to check the exploitation of the workers and enforce the new economic doctrines of social responsibility, nevertheless the rights of the workers were now safeguarded by law. The right to decent working conditions, reasonable hours and fair wages had come to be accepted without question.

The older ideas of irresponsibility in industry, which had brought about oppressive working conditions, were being replaced by a realisation of the economic advantages to be reaped from a contented and well-paid proletariat. For in spite of the guarantees offered by the State, which insured to the workers an increasing share of the wealth they helped to produce, social unrest was spreading throughout the world. The older code of conduct was giving way, and no authoritative guide was at hand to take its place. Corruption in politics exposed the weakness and untrustworthy character of parliamentary methods to deal with industrial problems. The spread of democracy had led to universal suffrage and a general levelling of political distinctions. As faith in the Church had broken down at the close of the Middle Ages, now faith in the State was beginning to decay.

In order to counteract the subversive movements that

were making headway, the State sought to assert its omnipotence by claiming the fullest allegiance of its citizens or subjects, and win their gratitude by paying greater attention to economic and social questions. On the one hand the State promoted the plans for industrial expansion of its capitalists and afforded them fullest protection abroad, even at the risk of war. On the other, it undertook a vast programme of social reforms in order to protect the health, insure the future and even in some instances provide for old-age pensions, education and the general well-being of the working classes.

The worker in industry was now looked upon as a national asset. Without him the wheels of production would stop and the whole elaborate mechanism of social life directly dependent upon industrialism would be dislocated. It is not that the first concern was the worker as an individual, but rather that the greatness and power of the State depended on the smooth functioning of industrial life.

VII

A new social viewpoint was being developed. The older individualist interpretation that had dominated political economy was giving way before the needs of the growing scientific economy. For a new economy was in the making, an outgrowth of political economy, but differing from the latter in principles and motives even more radically than political economy had differed from mercantilism. In spite of its secular foundations political economy harked back to ideas of Christian charity, and in amassing his wealth, the middle class capitalist had in mind many of the Calvinist ideas about the glory of God as made manifest through the possession of worldly wealth. Though harsh and ruthless in his exploitation of

the working classes, as employer, he was often philanthropically inclined, and gave freely to the poor, animated by ideas of Christian charity and the needs of his soul's salvation. His moral code was thus throughout governed by strictly utilitarian motives, though these often conflicted. The best way out was not to let his left hand know what his right was doing.

When after the opening of the 20th century industrial development took on world proportions, when no longer confined to Northwestern Europe, it was spreading rapidly across America and Japan and encircling the globe, the framework of political economy became too narrow. The new scientific world view was now assuming concrete form. Science, no longer the mere servant of mechanism, was about to emancipate itself from materialism, and was seeking to acquire spiritual significance. In order to do so the existing notions about science had to be recast.

The peoples of the Western world had grown accustomed to the technique of applied science. Scientific methods had become part of their environment. They accepted this environment as they found it, while still maintaining an old-fashioned religious viewpoint, belonging to a pre-scientific age, in so far as moral obligation and its attendant scale of values were concerned.

Applied science had taught men to look upon the world under the aspect of an orderly sequence. Ideas such as matter, motion, cause and effect framed this world. This mechanistic view, which was good as far as it went, left out of account a vast realm where mechanism plays no part. When once science began to concern itself with organism and attempted to deal with life, as we have pointed out, life as the supreme value came to be the province of science. The study of life, of human life, of humanity, its qualities and attributes, its fundamental

unity, now awakened ideas of social responsibility and social welfare in keeping with the new social conception of the purpose of life which science sought to formulate. The growth of socialism, the acute criticism of prevailing economic theories that had been undertaken by socialist leaders since the days of Marx, Lassalle and Louis Blanc, had to a certain extent undermined the individualist tenets upon which political economy rested. But it was not until the outbreak of the World War that the need for new economic principles was made plain.

VIII

The World War could not have taken place without the achievements of applied science and the new scientific technique. For the first time since the close of the Middle Ages a sense of corporate responsibility is felt in economic life. Among the Allies, no less than the Central Powers, a spirit of co-operation, a pooling of interests and scientific data that even went so far as to disregard national boundaries, had far-reaching effects on the new economy.

Industrialism, from being hampered by political restrictions, now broke through the old national barriers and established itself on an international basis. Industry for the time being was concerned not with profits, but with increased output and the speeding up of production. The lines of demarcation between the spheres of public and private business were obliterated. Economic activities became a national affair, and we find governments controlling through duly appointed officials all of the major channels of transportation and manufacture. Business men were for the first time looked upon as technical experts, whose special scientific knowledge was now depended upon in the successful prosecution of the war.

Owing to the war emergency not only production but consumption was rigidly supervised, and the civilian population was rationed in order to conserve resources. Everywhere science was appealed to, to devise methods that would increase efficiency and show the way to victory. Industrial problems became matters of first importance in the State, and we find everywhere a voluntary relinquishment on the part of the owners of the means of production of their privileges and rights which two decades before would have been unthinkable.

To cite the case of Great Britain which is typical of what took place in all of the belligerent countries, when the war came to an end there were four main governmental agencies empowered with industrial functions: "The Ministry of Munitions, responsible for the engineering and munition industries; the War Office for textile and leather industries; the Board of Agriculture and Food Controller, for the agricultural and food trades; and the Board of Trade for control over supplies for essentially civilian requirements. Alongside of these was the Ministry of Food which in the last year of the war purchased about eighty-five percent of all of the food consumed in Great Britain, and controlled the prices of ninety-four percent of the food and drink." [1] Had the war lasted another six months the programme of industrial direction and control elaborated by the British government would have included in one vast scheme, manpower, finance, transport, production and consumption. The fact that these measures of economic co-operation were not put into effect more rapidly was in great part owing to the difficulty of passing so quickly to a regimen of scientific regulation, which was still looked upon as

[1] Cf. Ogg and Sharp, *Economic Development of Modern Europe*, p. 661.

arbitrary interference with the individual rights upon which political economy rested.

It was not realised at the time that as a matter of fact new economic principles were being enforced. This is especially true in Great Britain where "each successive measure of State interference had to be preceded by some immediate disaster to national life." [1]

It was not only within the boundaries of the belligerent states that the new scientific ideas of co-operation in industry were accepted. Joint economic action by the Allied governments is also to be met with. Here the task of securing international industrial co-operation was even more arduous. After numerous preliminary failures it finally took form (November, 1917), as the Allied Maritime Transport Council, which included representatives of the British, American, French and Italian governments. The chief purpose of this body was "influencing the policy of national governments, co-ordinating their action and supplementing the deficiencies in their resources." Questions relating to food, raw materials, munitions as well as transportation problems, were dealt with. The efficiency of this organisation contributed in a great degree to the speedy conclusion of the war.

Within six months after the armistice, the whole mechanism of international economic co-operation fell to pieces, and the system of national economic control was also by degrees abolished. But the lessons of the war emergency have not been lost; "the inter-allied control of food, munitions, raw material and shipping has demonstrated that nations can act jointly to solve a common problem, which no one alone could solve separately." [1] Here we find for the first time the practical

[1] Ogg and Sharp, *op. cit.*, p. 661.
[1] Cf. Culbertson, *Commercial Policy in War Time and After*, p. 261.

application of principles of a world economic administration which is the basis of the new scientific economy. It was to be carried on after the war by private initiative.

IX

Everywhere we now note a consolidation in industry taking place. Already before the war cartels, trusts and combines were in existence, which aimed at abolishing destructive competition and preventing industrial crises. But in comparison with the mergers and combinations in industry which we now find, the pre-war methods seem insignificant. The concentration of capital of the post-war period is a direct development of the new industrial methods put into effect during the war. The cause of this new orientation is to be sought in the needs of mass production, the urgency of eliminating waste and increasing efficiency; the minimising of risks, by regulating production, allotting markets and doing away with the haphazard business methods that had characterised industrial expansion in the past.

In the new scientific economy there is no place for the small-scale producer; for the middle class capitalist who controlled industrial production before the war, and administered his affairs according to his own caprice. Now vast capital requirements and enormous initial outlay for costly machinery, labour-saving devices and advertising campaigns demand new methods of financing that can turn to productive account all available funds. The older ideas of thrift and saving, and a fixed though safe return on invested capital that was at the basis of political economy, has no place in the new industrialism. The new scientific economy is seeking to devise means to offer a share of profits to all willing to invest even a small sum in industrial enterprise. The division of ownership of

great industries into shares of small denominations not only taps resources that in the past would have remained idle, but creates a feeling of corporate ownership of the means of production that gives to industry a vastly increased influence in public as well as private life.

X

The most significant factors of the new scientific economy may be summarised as follows: (1) the elimination of competition; (2) the adoption of ideas of co-operation in industry; (3) the standardisation of production; (4) the diffusion of ownership; (5) the acknowledgement of the important rôle of the welfare of the workers in the processes of production; (6) the international character of industrialism.

Capitalism now takes on world proportions. National boundaries are henceforth disregarded by the new capitalist class, which, profiting by the lessons learned during the World War, is turning them to good account in the organisation of industry along scientific lines. Industrialism has adopted an international policy, is striking out along new paths of its own, leaving governmental agencies far behind. In the work of reconstruction after the war economic questions are taking first place. International co-operation in industry is making rapid progress in spite of the national jealousies that still dominate politics and prevent a broader international understanding.

The problem of converting industry, organised for the prosecution of the war, into peace-time production without losing all of the efficiency which war-time organisation had made possible, was complicated. The psychology of the peoples of the West was still dominated by the older political principles and individualist economic

theories. Ideas of sovereignty and national honour still survived and hampered at every step the economic rehabilitation of the victors and vanquished alike. It was not appreciated how closely the new scientific economy had bound the various peoples; how it had broken through all national limitations and was seeking to establish itself on a world basis.

The multitude of new states that had won political independence as a result of the war, added greatly to the difficulties, as these small states had no sound economic reasons for existence. The trade barriers that their national boundaries imposed, were contrary to the aims and needs of the new industrialism, which, based on large-scale production, required a free world market. Thus the political perverseness of the men who framed the treaties of peace placed endless vexations in the path of economic readjustment.

The new scientific economy was teaching that, "the aggregate output of commodities could be very greatly increased, their average cost of production considerably lowered, and a valuable saving in the expense of transport and distribution effected if only each industry were organised as a whole, in relation to its function in supplying the community with what was required—by collective purchase and importation of the raw materials; by concerted allocation of production to the establishments best suited to each part; by further standardisation and specialisation; by elaborate comparative costing of each component and every item of expense, and the relentless application of the knowledge thus gained in the effecting of improvements wherever required; by the concerted distribution of the product so as to lessen the aggregate of handling and transport; by collective selling and the

elimination of unnecessary advertisement and expenses of distribution." [1]

These methods, based on the needs of the community, which had been the first consideration during the war, were difficult to enforce when once the emergency had passed and old habits again reasserted themselves. This accounts for much of the chaos in the reconstruction of Europe after the war. But the dark side of the picture should not obscure the great progress made. The ground has been cleared for the rise of the new scientific economy. The lessons as to the value of co-operation have been learned. Social welfare has come to be recognised as an indispensable part of industrial efficiency. Though socialism in its political sense has in a measure been checked, ideas of social solidarity are permeating all classes. The older exclusive egoism of pre-war economy has all but disappeared; and if much remains to be done before the new economy establishes its undisputed supremacy, we may already see that the age of national political economy has passed, and that the way is open for the growth of an international scientific economy in which social responsibility, public welfare and industrial efficiency will occupy first place.

[1] Cf. Beatrice and Sidney Webb, *A Constitution for the Socialist Commonwealth of Great Britain*, p. 326.

CHAPTER V

Science and Efficiency

I

SCIENCE is not only transforming the economy of the new age, has not only revolutionised commerce and industry; changed all accepted ideas of space and time; drawn the peoples of the world into closer relations, making them realise a sense of world unity, but is forcing us to reconsider the spiritual foundations of our civilisation.

In order to gain an insight into the spiritual rôle of science it is well to recall that science to-day differs in many respects from what it was even so recently as at the close of the 19th century, when a self-satisfied materialism ruled the scientific world; when it was believed that the realm of science had been fully surveyed and all that remained to be done was to exploit the rich resources discovered by ever-increasingly ingenious mechanical means.

To-day the material aspects of science are no longer exclusively important. In fact "matter" is, as we have seen, growing far less "material." The world as we know it, is not made up of blocks or lots of inanimate matter, but of events from which matter is derived by logical construction. Here we are close to the origins of the modern scientific world view. It is the events that count. They are conceived of as part of a continuous flux and change. Mobility is now an independent reality. As

Mr. Bergson expressed it, "movement is anterior to immobility. To think of an object is to have an immobile view of mobility."

The fixed, immobile world of matter of the religious world view, which had been reeling under the blows of science ever since the 17th century when the motion of the earth was first asserted by Galileo, now receives its *coup de grâce*. "The stuff of which the world of our experience is composed," writes Mr. Bertrand Russell, "is in my belief neither mind nor matter, but something more primitive than either. Both mind and matter seem to be composite and the stuff of which they are compounded lies between the two, in a sense above them like a common ancestor." [1]

Though this and similar interpretations may not be wholly satisfactory, nevertheless there is no room here for the old ideas of materialism bequeathed to us by the 19th century. In the same way the harshness and brutality of science as revealed in the early evolutionary theories, in the doctrine of the struggle for survival for example, are being toned down. Science is becoming more urbane, more human without losing any of its power over the forces of nature. It is becoming less arbitrary. The baffling problems that confront it can no longer be solved by any appeal to first principles.

Science now refuses to deal with stable, imperishable entities. It is concerned with strangely fashioned energy structures, about which it knows very little. It is being daily compelled to revise its technique, to think of new methods before it can go ahead. In this way the older mechanics of matter as well as the so-called laws of mind are continuously being revised. "No man of science," says Mr. Whitehead, "could subscribe without

[1] *The Analysis of Mind*, p. 4.

qualification to Galileo's beliefs or to Newton's or even to his own of ten years ago." [1]

II

The farther we advance along the paths of scientific thought the more obvious does it become that if matter is not so material, mind is no longer so exclusively mental. Both are combined in the process called living. It is this living aspect of science that must engage our attention.

Science, not content to deal with dead data, henceforth concerns itself with events, with activity, with mobility, with life. As Mr. Whitehead has put it, "We are immersed in action and can only fitfully guide it by taking thought." "Action," says Mr. Bergson, "is our faculty of effecting changes in things."

Descartes had taught that bodies of all sorts, of plants as well as animals, are mere mechanisms animated exclusively by material forces. This mechanistic view, which had been accepted without question by science for over two hundred years, has become inadequate. In its place sundry other theories are now suggested. A vital principle is appealed to: "No kind of causalty based upon the constellations of single physical and chemical acts can account for organic individual development; this development is not to be explained by any hypothesis about the configuration of physical and chemical elements. . . . Life, at least morphogenesis, is not a special arrangement of inorganic events; biology, therefore, is not applied physics and chemistry; life is something apart and biology is an independent science." [2] Or if we prefer, "The idea of the physical universe as a world of self-existent matter and energy is only a temporary working hypothesis,

[1] *Science and the Modern World,* Lowell Lectures, 1925.
[2] Cf. H. Driesch, *The Science and Philosophy of the Organism,* p. 142.

by means of which we are able to introduce a certain amount of order and coherence into a large part of our experience. . . . The hypothesis breaks down in connection with the phenomenon of life." [1]

It is to the phenomenon of life itself that science now turns its attention. Life, whatever its nature, becomes the highest value. It is not only intrinsically superior to non-life, but human life gains a dignity, a spiritual value for its own sake. Life emerges in an organism, as a pattern of events with which science would deal. Life is endowed with unique qualities of its own which it is the business of science to note down. In so far as it is able to go, science finds that life is self-adjusting, self-preserving, self-perpetuating.

But science refuses to rest content with the interpretation that life is nothing more than crudely active matter. It would delve afresh into origins, dissatisfied with the scientific hypothesis handed down to it by the 19th century. It thus finds co-ordinated to life, complicating its organisation, raising a new series of problems—mind. A new theory of emergent evolution is developed that is to make room, not only for life but for mind and reflective thought. The old mechanical interpretation is definitely discarded, while scientists are busy seeking to formulate the new emergent theory.

Professor Alexander, in his epoch-making book, *Time, Space and Deity,* in order to get at the very foundation of nature as it now is, "bids us think out of it, all that has emerged in the course of evolutionary progress—all that can be excluded short of annihilation. That gives us an inexpugnable remainder, a ground plan of ultimate basal events (pure motions) with naught beyond spatio-temporal terms (point-instants) in fluent relations of like order.

[1] Cf. J. B. S. Haldane, *Mechanism, Life and Personality,* p. 101.

This he calls space-time, ubiquitous, all-pervasive and inseparably hyphenated. From this point emerged "matter," with its primary and at a later stage a secondary qualities. Here new relations, other than those which are spatio-temporal only, supervene. Later in evolutionary sequence life emerges—a new "quality" of certain material, physico-chemical systems, with supervenient vital relations hitherto not being. Then within this organic matrix or some highly differentiated part thereof already "qualitied" by life, there emerges the higher quality of consciousness or mind. Here once more there are progressively ascending grades. As mental evolution runs its course, there emerge at the reflective stage of mind the tertiary qualities—ideals of truth, of beauty and others ethically right—having reactions of "value." And beyond this at or near the apex of the evolutionary pyramid of which space-time is the base, the quality of deity—the highest of all—emerges in us, the latest progress of evolution up to date." [1]

Though we need not follow Mr. Alexander to the end of his series of emergence, it is suggestive of the new method in science that he introduces mind into his scientific hypothesis. In the same way for Mr. Santayana body is the substance or instrument of mind, and has to be looked for beneath it. "The mind is itself eternal and plays about the body as music about a violin, or rather as the sense of a page, about the print and the paper." [2]

However we may seek to interpret it, mind implies certain definite qualities. It means coherence amid a changing world, uniformity amid heterogeneity, unity amid diversity. Mind contributes to life, not only organisation discipline, co-operation, but a universal compulsion to con-

[1] Cf. C. Lloyd Morgan, *Emergent Evolution* (Gifford Lectures, 1923).
[2] *The Age of Reason,* Vol. V, pp. 162-163.

structive action. Mind is not a symbol of reality in the organism, it is its creative activity directed towards the realisation of what, for want of a better term, we would still call eternal values.

Mind reflects and preserves the significant, the enduring elements in events. It gives to an organism its unique character that makes it one and not another. "Hence if the world process is directed towards harmony we legitimately infer a mind as its centre, but the form of unity which such a mind possesses is less easily determined. It is possible that personality on the one hand and the social union of personalities on the other are rather its creations than adequate expressions of its substantive essence." [1]

III

Life does not readily submit to formulæ, nor mind to definitions. We have reproduced here various attempts made to capture the essential ideas about these weighty matters. Mr. Alexander speaks about *emergence,* Mr. Lloyd Morgan prefers *relatedness,* but wherever we look we find a sharp contrast between the scientific temper of to-day and that of the preceding period. Science is no longer aggressively oracular and dogmatic. It is learning lessons in humility. We may even note a mystical strain in current scientific thought. Thus Mr. Lloyd Morgan can write, "Emergence in all its ascending grades is loyally accepted on the evidence with natural piety. It may be that we have to accept the newly given facts in the frankly agnostic attitude proper to science. Or it may be that in the acknowledgement of God an ultimate philosophical explanation, supplementary to scientific interpretation is to be found." [2]

[1] L. T. Hobhouse, *The Rational Good,* pp. 229-230.
[2] *Op. cit.,* p. 9.

While the scientific world view is spreading, men of science seem to realise the inadequacy of their equipment to deal with the vast problems they are raising. It is not surprising that they should fall back on old ideas about God and seek to make them over to fit the new conditions. For science has as yet forged no adequate spiritual apparatus of its own, no cosmology which is able to take care of the eternal, the sublime, the ineluctable.

Mankind has for so long been accustomed to accept both a divine scheme and a supernatural schemer, that it is only natural that science, finding itself face to face with the infinite, should temporarily at least, make use of ideas ready-made for the purpose. But when once science concerns itself with the problem of life it cannot be long before the last remnant of the biblical cosmology must be abandoned.

Mind from being a divine attribute becomes a human characteristic, intimately bound up with life. It is through mind that life as conscious existence takes shape in events; emerging in significant forms it becomes culture, art, science, civilisation. It is in mind that the values of life are discovered. For mind is as far as we now know, immanent in an individual life unit, and only gets beyond this individual by means of messages and signs that he is able to discover and make use of. It is the getting beyond itself that is the most important function of mind.

Mind thus builds into life the strongholds of thought, of value, of perfection, or again spins the fine web of its imaginings in arabesques of plastic symmetry, as language and as art. It projects into the world of external objects a pattern of behaviour that we come to know as events. But mind itself remains imprisoned within a given life, grows up with this life and with this life decays. To

escape from within the walls of individual life into a life eternal has been a fond dream of mankind. As far as we know this dream has no correspondence with reality, and seems to lose all significance when we accept the scientific world view that mind is compounded out of life, is merely a facet of life, of conscious life.

From beginning to end we must still rely on circumstantial evidence as to the proof of the existence of mind, yet this evidence is conclusive and antecedent to all other. For it cannot be doubted that the events that rise to the surface of life are intermittent representations of the ultimate needs of the body, which without the guidance of mind could not have been developed. As long as the more primitive and undifferentiated life levels were not past, the part mind would have to play is not evident. Once the process of evolution has developed life into an organism that is to take part in events, the guidance of something similar to mind is essential.

Mind in slow evolution rounded out life, made the evolutionary process feasible and purposive. Even when mind reaches the cultural stage we recognise as a high civilisation, its development is far from complete. Though life as manifested in the human body structure has not changed materially these many thousand years, mind structure is undergoing continuous growth and development.

We may trace in history the cultural level attained by an inquiry into the mediums through which mind has manifested itself. The scientific interpretation of the universe undertaken by the Greeks led to the most brilliant cultural epoch in history. It is the sole known exception to the general rule of mind wrapped about by the cerements of a religious interpretation of the universe. In our own times science once again steps forward as the interpreter of mind and the needs thereof. It commands

our attention as offering a more efficient guide in the world of events than any ever available in the past.

It is here that the idea of efficiency emerges from the new scientific world view. Efficiency becomes the touchstone of science. It is the impulse that urges us to create the new, to find the better way. It is not by accident that efficiency has become the watchword of the new age. It is not as is so often believed an incidental discovery of scientific method. It symbolises and synthesises the whole scientific world view.

IV

The idea of efficiency belongs to the 20th century. It has transformed our outlook on life, and separates us by a wide gulf from all that has gone before. The world view of science is here seen as differing altogether from all previous interpretations of the universe. Even the Greeks, who held many sound scientific notions, nevertheless looked upon the world of higher realities very differently. They thought of this world not as something to be re-created and made ever better, but contemplated the universe as they found it, and were satisfied to enjoy it as it was. They admired, they worshipped, they wondered, but with folded arms. It never occurred to them to do anything about it.

It was not until Modern Times that all this was changed. The religious world view which prevailed in the West had deliberately turned its back on nature, ignored its laws and sought to get along without them. But with the reawakening of science, the laws of nature became the chief interest. In consequence men learned how to exploit nature and built up the body of scientific knowledge which made them masters of the universe.

After science had a free field for development and ideas

of indefinite perfectibility and progress became the conviction of the peoples of the West, the expansion of applied science transformed the world in which we live. As a first result the old problem of evil, which harassed religion at every turn, lost its significance when once wealth and material comforts raised the standard of living and offered what in the past had been the luxuries of a few as the necessities of all. The conquest of disease, the new ideas of sanitation and hygiene, stimulated to further efforts, in order to discover ever more efficient means to safeguard life. Underlying the idea of efficiency there was a principle of action which expresses a new psychological attitude, implies a new philosophy of life inherent in the scientific world view.

V

The fundamental aim of efficiency is to secure a maximum of performance with a minimum of effort. Its historical origins may be traced to the investigations made to develop and improve the methods of scientific management in industry in order to increase output. Thus it is essentially a practical idea, an outgrowth of the application of scientific method in industry, and not a theoretical or metaphysical principle.

Efficiency expresses the belief that there is one and only one best way of doing a thing, and that it is the business of those in charge of the direction and organisation of industry to discover this way, to make use of it as long as it continues to be the best one, and to discard it as soon as it is found that it is no longer the best way.

The immediate practical effect of the application of the methods of efficiency was the standardisation of production, and subsequently of product. It made possible the gigantic strides of industry. It suggested in turn func-

tional control of industrial processes in order to eliminate waste, the cutting down of overhead by combination and concentration of capital, a vast increase in production and area of distribution. It developed methods of specialisation which were extended far beyond the workshop.

The idea of scientific management by experts led to the perfection of technical processes to a degree never deemed possible in the past. It was not long before efficiency in production far outran methods of distribution, controlled as the latter still were by principles belonging to a pre-scientific economy. The volume of production attained by the application of the new technique of efficiency in industry, within a brief span of years became far greater than could be profitably absorbed under a system still governed by a philosophy of exclusive egoism, by men accustomed to think in terms of their ledger balance, of pecuniary profit and loss.

In brief, whereas efficiency methods made possible a scale of production which could satisfy the natural needs of all, yet these needs remained unsatisfied, as the test of value was not in the first place service, but profit, or service that paid. The value of scientific management in industry is still computed on the basis as to whether or not the owner of the means of production makes money out of his business. Production is slowed down when it reaches a point, which under the new system it readily did, of "overproduction," when goods produced could no longer be marketed at a profit, when the supply exceeded the demand. Demand is measured in terms of ability to pay not the actual cost value, but a plus-value which includes profit.

In spite of the shortcomings of the idea of efficiency we must not overlook the immense advantages that it has conferred. It was devised to increase production by

stimulating the productive capacity of the workman through scientific study of the manner in which work was to be done and then teaching the best way to do it. In this it was eminently successful. It led to a detailed study of the nature and character of work. This brought about radical changes in industrial administration and organisation. In the process a new social principle, the idea of the one best way, was evolved.

VI

The philosophical idea underlying the new scientific world view we would call tentatively the doctrine of *the one best way*. It will readily be seen that the acceptance of this doctrine implies a complete change of mental attitude. It supersedes the older notion that every man is to be free to work, or do with his property as he pleases. The individualism of the 19th century is replaced by a new sense of social obligation. Scientific efficiency in production is looked to, rather than the caprice of the owner. Efficiency methods offer a basis for a constructive programme of social organisation. It is implied that the discovery of the one best way will lead to the development of a technique in industry that will insure so great a surplus that there will be enough for all. In fact, where methods of efficiency have been introduced this has already proved to be the case. Hours of labour have been reduced, wages maintained at the old levels and in many cases even raised.

The doctrine of *the one best way* expresses in a terse phrase the philosophy of industrialism. It connotes a scientific basis for the investigation and discovery of the most efficient method for doing the work of the world. It indicates that this work, no longer drudgery in the old sense, is to be the bond of allegiance that will make pos-

sible the pursuit of new social ideals. By following efficiency methods, a higher degree of material well-being at a lower daily quota of labour will be possible. It will insure greater leisure for a greater number, a new sense of freedom from toil. As a consequence the cultural level of all will be raised. But it requires in return the recognition of the social character of man and of the all-important rôle that science is destined to play.

The age in which we live forces us to learn how to live efficiently. Man has surrounded himself with complicated machinery to afford him service. He must know how to use this machinery, otherwise it is of no value to him. The more efficient the use, the greater the value. But this efficiency can only be obtained by following the specific rules laid down by experts; in other words by application of the methods of the one best way.

The method of science requires us to admit with Heraclitus that "the sun is new every day." It is the novel aspects of the life about us that science reveals. It is not a question as to whether we think it better or worse than the old order. What is needed is to realise that it is a new order that requires a new method of approach, a new understanding.

The social unrest that prevails in our times is in a large measure due to the difficulties of adjusting the new ideas about work to the old moral code under which we still live. The scientific world view would make of work a minimum of effort. It denies the truth of the older religious view "by the sweat of thy brow shalt thou labour." It would make of work, through methods of efficiency, a co-operative enterprise from which all idea of drudgery has been eliminated.

But when efficiency methods have been introduced we

are told that the worker suffers from boredom which is far more acute and painful than his former servitude in day-long drudgery. We would doubt the accuracy of such assertions, but can offer an explanation of their partial truth. As long as the older individualist views about work being the achievement of a given worker prevail, a sense of incompleteness must accompany efficiency processes. But if we are able to accept the new social nature of work in which the burden of the labour involved is borne by the machine and the worker becomes a mere machine-tender, then the sense of incompleteness of such work vanishes.

The idea of co-operation is a fundamental part of the new scientific technique which finds expression in the doctrine of the one best way. In practice the individual worker is not free to do as he pleases, but is compelled to perform his task in accordance with the methods devised by others for him. As a result we are coming to see that organisation and co-operation represent a new scale of values. Our widening social and economic interests are the direct result of the application of the methods of efficiency.

In addition the doctrine of *the one best way* is forward looking. It makes room for novelty and change. It would discard the old as soon as it no longer can stand the test of efficiency. It affirms that reality is to be looked for in events, is a synthesis of events which are made use of to carry on until such time when a new synthesis may be offered. Thus our doctrine is continuously provisional and at the same time enduring. For it is not to be discarded until a newer and better way has been found. It would spur the best minds on to discover a better way, and offers large rewards in the event of success.

VII

The idea of efficiency takes into account social behaviour in seeking for the best biological adjustment of the individual to his environment. It gives new significance to this behaviour by stimulating a sense of co-operation rather than competition. It makes for the realisation that it is by and through others that our own urgent wants are filled. It would offer the best method to fill these wants, while at the same time filling those of others by emphasising the interdependence of individuals, the interlocking character of work to be carried on by all. Thus it is essentially ethical.

The doctrine of *the one best way* implies a definite form of behaviour which would insure the best interests of the individual as well as of his social group. It would bring into harmony these so often conflicting interests. And if in the process the individual is shorn of some of his capricious powers to indulge his whims, the new discipline of efficiency more than compensates for any such loss. The individual is looked upon as a member of the social group, merged in this group for the purpose of carrying on the work of the world more efficiently. This does not mean that we would substitute a group mind for an individual mind. The whole idea of a group mind apparently rests on a fallacy. Mind as we have pointed out is an exclusively individual function, an indwelling characteristic quality of life. To extend mind by analogy to a social group, to a crowd, a people, a nation, and develop thereupon an elaborate system of group psychology as has recently been attempted, seems unwarranted.

Behaviour, whether of one or of many, is in its directive control individual. Though social pressure is not denied —an individual behaves very differently in a crowd

than he does in a small group or again when he is alone—the only response thereto is some individual mind or collection of individual minds acting in harmony, but nevertheless individually. These individuals are not in some mysterious way melted into a new entity, a group that has a mind of its own, but rather each individual is influenced by propinquity and behaves as a result of this influence in a definite manner.

Thus there is no danger, that because under methods of efficiency the given worker is compelled to surrender his own initiative and learn how to work in a mechanically definite way, he will lose all initiative and become merely a cog in the wheel of industrial production. On the contrary what in the past was a haphazard process has now been systematised and improved. More work is more easily done, and the worker, once the prejudice of custom is overcome, finds a new sense of freedom in his work.

VIII

In the broader field of social life the idea of efficiency offers a better way to social adjustment. It means that in the work of the world as well as in its cultural needs matters of first importance to community life and well-being are not to be allowed to be decided by each and every one of us according to individual fancy. But after a scientific survey has ben made, the one best way is adopted in order that the most successful results may be attained.

Thus there is a moral purpose behind all of this striving for efficiency. As such the doctrine of *the one best way* has already become binding upon all of us. It is not something we can renounce at will. If we refrain from furthering the aims of efficient living, our conduct is patently immoral. For in an age of science such as our

own, whether we like it or not, morality has to do with social welfare rather than individual salvation, convenience or caprice.

Science imposes upon us new moral imperatives. The pressure of what we "ought to do" has never been more constant than it is to-day. It is to be summed up as the law of efficiency. The whole body of social regulations has to do with efficient living. Social responsibility means nothing more than a justification of a moral code that is grounded on principles of efficient action. The realisation of value is merely another way of saying the one best way. An efficient morality is the highest value that the scientific world view is seeking to discover.

The idea is novel, and therefore to many obnoxious. Science still suffers from the century-long mechanical interpretation placed upon it. In the same way the idea of efficiency has something of the merely mechanical, of the automaton that still clings to it. It is so often claimed that efficiency makes of man a mere machine. But this is an error. Just as there is no such thing as a group mind, just as mind is an inherent part of the individual, a living function that belongs inalienably to him, so efficiency connotes a form of behaviour of individuals, best adapted to the needs of a scientific age. Efficiency is not something that transforms the individual into a machine, freezes out life and makes him over into a mechanism, a "robot"; but rather being efficient leads to a fuller, richer social life by securing a truly harmonious adjustment between individual behaviour and social environment.

In a complex and complicated society such as science makes possible, where individuals live and work in great cities, as never before is individual behaviour of necessity made subservient to social needs. Modern society could not exist without a tacit acceptance of the ideas of

efficiency that have already been developed. All that is necessary is to bring them out into the open and show in how far a scientific world view is developing a moral code—that is to say a code of behaviour based on efficiency.

The doctrine of efficiency offers a provisional statement of the new scientific morality. Here the individual remains as the unit of social action. Filled brimful with his instincts, emotions, longings, desires, dreams and whims, which psychologists are so busy interpreting, there is holding these in check, moulding and fashioning them for a social purpose the idea, however vaguely formulated, that the way of science offers *the one best way* to the highest spiritual values of life.

CHAPTER VI

Science and Morality

I

UNDER the impact of the idea of efficiency a new moral code is taking shape. Life as worth living as an end in itself, acquires a moral significance of its own. In the past morality had to do chiefly with the relations between the individual and his God; it was preoccupied with the problem of adjusting life here and now to a life in a world to come. Salvation was the key to moral conduct. It was essentially an individual affair. Each and every one severally looked to his own salvation. And though religion taught lessons of charity and sought to promote social welfare, these were only incidental to the main business, which was extra-mundane.

In such a society poverty and disease, war and pestilence had a moral significance, taught a moral lesson. Labour was a form of personal discipline, if not of punishment imposed by God. We have analysed some of the aspects of the religious moral code.[1] We have noted the stages of the decline of religious morality. We would here seek to outline certain elements of a new moral code which is the direct outgrowth of the scientific world view.

The fundamental difference between the new and the old morality lies in the distinctively mundane character of the new moral code. It is essentially an efficient morality. It is furthermore based on reason. Whereas

[1] See Bk. I, Chap. VI.

religious morality even in its highest forms is steeped in emotionalism and superstition, the morality of the scientific world view is by definition founded on rational premises and concerns itself with the progressive improvement and development of the individual through social specialisation and co-operation. It asserts boldly that mankind holds the power of controlling its own destiny on this earth, and that it is its highest duty to control it most efficiently.

The study of science confirms that evolution has tended invariably towards the ultimate perfection of higher social forms, in spite of the fact that degeneration and decay have played an important part in history. Although the limits of the evolution of man in his physical aspects have probably been reached, nevertheless we may trace not only a clear, but an increasingly rapid rate in the evolution of mind, tending towards assuring greater efficiency in manner and method of organising social life. The whole evolutionary process reveals a steady advance in intellectual and moral standards throughout the ages, so that our cultural and spiritual level to-day is, when viewed in proper perspective, higher than anything that has ever existed in the past.

II

Just as no educated Roman, even of the 4th century, could have foreseen the Dark Ages that were destined to destroy the culture of classical antiquity, so we to-day cannot with certainty predict that industrialism will have a chance to flower, and establish social institutions of its own. At least we may increase these chances if we seek to establish the foundations of the new civilisation more solidly.

Roman civilisation came to an end because no means

was found to adjust the Christian world view to that of the pagan world. The religious spirit of pagan Rome had grown formal and scrupulous; it no longer had any deep roots. Yet Roman society in the 4th century seemed confident in the permanence of the ideals of pagan culture, and hardly conscious of the great movement which was setting in towards a life of renunciation of this world. In the same way in the 20th century there are many who are confident in the permanence of the ideals of Christian culture, and hardly conscious of the great movement towards a new interpretation of life, or that a new world view is in the making which involves as radical a break with the past as that of the transition from the pagan to the Christian morality.

The scientific world view is in itself not so new a thing. It has been developing for at least three centuries in the West. Slowly it has invaded the citadels of religious thought, and under cover of the old forms built up new moral principles. Whatever progress, whatever improvement and hope of further advance exists in the world is to be found in the realm of science. Though religious morality has long been declining in influence and authority, nevertheless its traditional force is so great that few have openly dared to question its edicts. The time is now ripe to examine the claim that life is endowed with a spiritual character of its own, not as part of a divine plan that demands renunciation of this world, but of human excellence that sees in the world the way to achieve a good life. Here we must look for the elements of the ethical principles, the moral code suited to an age of science.

The place left for an all-powerful deity in the scientific scheme of things, is relatively insignificant. Some may,

if they choose, call the highest attainable good the Deity. Perhaps it does no harm, nor does it in any way help to achieve the good. As long as the individual stood alone, isolated and bewildered in the midst of the new scientific universe he had so recently discovered, it may have been useful to retain God in the background as a prop to morality. But this is no longer the case.

The world we live in is no longer a mysterious and dreadful world. The individual is no longer standing alone, expected to choose for himself the path he is to follow. Social influences are at work guiding him at every step, disciplining his activity, teaching him the value of efficiency, pointing to the possibilities of the development of his capacities. Though the individual works, creates and dies for the good of the group, and the interests of the social order are often placed above his personal desires, nevertheless he is himself unique and irreplaceable, the repository of life. He it is who feels the benefits and suffers the hardships. Furthermore science has relieved mankind of a great intellectual burden that weighs so heavily on the religious moral code. It is teaching us that a moral way of life does not depend upon some divine or extra-mundane power, and what is more suggestive still, that intelligence is not the master of our acts, but the diligent servant of our appetites, and that behaviour is the ultimate manifestation of life. Behaviour is of itself something fundamentally social, that has for its immediate object the adjustment of the individual to his environment. This environment thus requires special recognition on its own account as influencing all behaviour, while behaviour itself becomes the important factor in moral conduct. Here we are coming upon the groundwork of the new morality.

III

Behaviour as we would use the term, is not confined to any narrow interpretation which may be placed upon it by a particular school of psychology that has laid hold of the word and made it serve as a carry-all. It means the system of relations established between an individual and his environment. And though the individual as such may reason and remember, forget, covet, love or hate, from the standpoint of morality he merely behaves in a definite way. His behaviour is all that we can take cognisance of. We may influence his remembering and forgetting, repress his covetousness and teach him to love and not to hate, but in the last analysis it is his behaviour that counts, and this behaviour is adaptation and adjustment to an ever-changing environment.

The complexities of mind and of intellectual processes, the impulses and proclivities of the individual are all inextricably bound up with the effort to insure an adaptive behaviour, best suited to the situation that has arisen. A given life form while it grows, matures and decays, does so more or less automatically. The organism maintains throughout a coherent sameness, a unity and continuity which in human beings we recognise as a person, to whom we give a name and a place in events for purposes of identification. This person in so far as a moral agent, takes part in events, that are continuously emergent, and therefore the person is continuously adapting himself to the new situation and being modified in turn thereby. It is here that behaviour becomes the object of moral solicitude. Morality is nothing more than the most satisfactory adaptation of behaviour to emergent social events. The efficiency with which such adaptation takes place, assures the efficacy of behaviour and hence of moral conduct.

Though the individual as such may be an interesting psychological study from the standpoint of consciousness and mental processes, nevertheless this is not the field of morality, which has to do with problems of social adjustment. Morality arises as the result of the social sanction of definite types of behaviour, and the prohibition of certain other forms. If we would but strip morality of all accretions with which it has been crusted over by century-long servitude to religion, we find that all moral codes are nothing more than certain common-sense rules of experience that are to be followed in order to correct individual maladjustment to environment.

The flavour of false piety that has invaded the field of morals has rendered the word "morality" obnoxious to many of us. The fact that for so long the moral code in force has been inadequate, has served to discredit morality even among many thoughtful persons, as though it were something akin to superstition, good perhaps for the ignorant, but from which the élite were to be enfranchised. We will examine in detail these aspects of the question later. Here it will suffice to note that the new moral code which would interpret a scientific world view makes no appeal to divine authority. Nor does science take the place of the godhead. We would not speak of an all-good science as our fathers did of an all-good God who sets the standard of moral worth. We claim that righteousness and goodness, virtue and other moral perfections, are labels we attach to those forms of behaviour that are best adjusted to given events.

IV

There are few who still believe that we are endowed with a set of moral faculties that Adam Smith so pom-

pously called "the vice-regents of God within us." We are learning that there exists no authority, divine or other, that can lay down the moral law. The only safe guide is experience; experience of the individual and of the race that may point out the one best way, which in our view coincides with the moral way of life.

Thus a moral judgment is at best a provisional affair. It may well be cited as a precedent, and is to be so cited as long as it has not been discredited by further and wider experience. In the same way the moral lawgiver may be a convenient figure, but his authority is at best temporary, limited in the application of his edicts to the special circumstances under which they were intended to apply. For the pattern according to which behaviour is to be determined is noble or ignoble in so far as it affords adequate adjustment to the changing circumstances of environment, and not mere conformity to precepts that may have been laid down.

It is well to note here that adequate adjustment to environment is not to be confounded with successful enterprise. It is patent that a robbery successfully carried out would not receive our moral sanction as adequate adjustment to our environment. Adjustment to environment as manifested in individual behaviour implies fulfilling a social obligation. Here there is room for duty, but for no rigid rules of duty that would burden the conscience with details of conduct. The moral significance of our acts is revealed in the harmonious adjustment between the individual and the events in which he takes part. *Act so that this harmony is continuously perfected,* is the sole guide of conduct that acknowledges in *the one best way* the ultimate end of life.

It will be argued that this *one best way* is not clear to us; that incompatible impulses are continuously strug-

gling for mastery within us; that it is more than difficult to recognise the good, to say nothing of attaining it. The history of morality shows us that no agreement has ever been reached as to any abstract rules of right and wrong. There is no act possible to man, no matter how criminal we may regard it, that has not at some time or place received moral sanction. Murder and theft have under special circumstances been held conducive to social welfare. Morality is however invariably a seeking after a better way of life, even though its motives may subsequently be held immoral. A higher morality in which the "ought" comes to play the mentor of duty while leaving a wider latitude to individual choice, nevertheless is of the same nature as the more primitive "must."

We are coming to realise that moral imperatives are not binding beyond the limits of social life. The individual is as such non-moral. Morality awakens in social conduct. All rules of morality are rules of social conduct. But there is no guarantee that the rules cannot be improved upon. Man has no moral faculty, and left to himself his conscience, itself of frailest texture, soon dissolves. Hence the need of a code that makes possible a form of conduct that will ensure a measure of social adjustment. This adjustment is in a large part imposed by circumstances over which we have often no control. Nevertheless we are not warranted to speak of a social conscience or a social duty as an abstraction, or even as an entity in itself. Here again it is a sum of individual consciences, that acting in common, take on one from the others a tone that none as individuals would possibly possess, but this is not saying that over and above individual conscience there exists a social conscience. This is obviously an unjustified conclusion unless we have recourse

to supernatural arguments where experience cannot follow.

V

Morality in its newer interpretation is essentially a matter of experience. It is the individual who as a result of social contacts develops a moral sense, frames his code of conduct based on personal conviction and the teachings of experience. If we look closely we will find that morality, far from being some superior gift of God, is the outcome of an effort to adjust to events, to be better prepared to act efficiently in any and every circumstance which may arise.

Morality is thus nothing more than a plan of efficient action which it is recognised by experience is the best policy to pursue. Right conduct, the seeking after the highest good, is not a divine impulse with which some are endowed, but merely an efficient way of life. It is thus not something above us that we are to strive for as an ideal. It belongs to us. Earthy of the soil in which it grows, morality requires no divine sanctions. And if conscience is no infallible guide, moral conduct is not a fixed pattern that has been laid up in heaven.

Morality is furthermore part of the space-time world in which we live. It is a plan to be consulted in shaping our behaviour and nothing more. It is the servant not the master of our lives. As science is teaching us that intelligence, judgment, reason itself are to be looked upon as the guides of our emotions and instincts, so we are learning that our conscience, our morality are mere guides of our habits, customs and behaviour that make social life possible.

Behaviour has always in view some social purpose. Whether this purpose is held to be good or bad depends,

not on our acts in themselves, but on the ends which they serve. These ends are invariably individual, though the pathway to their achievement lies through the social order. The moral codes that have been offered in the past assume that there is but one strait and narrow path that leads to the Kingdom of God, and that this is the path that ought to be followed by all. In the religious world view morality is fixed beyond possibility of change. There is no consideration for the individual as such, for his physical and psychological peculiarities, his unique needs. Morality in this view is categorical, and there is no escape from its decrees.

The new scientific world view, on the contrary, takes into account individual variations. It acknowledges that physiological and psychological differences exist between individuals, which influence behaviour and mould character. It would make allowance for these intellectual and emotional differences. It would have us realise that failure to adapt to environment may be due to a variety of causes, to conflicts and repressions within the individual that have nothing to do with ideas of right and wrong as traditionally held. Science is teaching us that the individual mind is neither tidy or well-balanced, nor is it a clean slate, on which experience can draw a neat pattern of conduct; but rather that consciousness is a tangled skein of emotions, impulses, cognitions and conations, coming from we know not where, and leading more often than not into blind alleys from which no exit is possible. It has in addition discovered a new world of the unconscious, the coast-line of which has barely yet been charted, but already we know that here is a world of events where things happen that influence conduct and may account for many anomalies of behaviour. It would make room for modes of behaviour due to natural pre-

dispositions, both racial and individual, the nature of which is still only vaguely surmised.

Thus it is evident that there is no common path of moral action for all to follow as asserted in the religious code. But rather each and every one of us follows a trail that he must blaze as he goes. Every individual is a path-finder in the moral world. It is a path that lies through a wilderness of emotions, instincts, habits, customs, traditions, an ever-changing scene. There is no turning back except to look at the trail that has been cleared so far, and profit by the experience we have gained in cutting through difficulties that may have seemed at first glance insurmountable.

VI

The chief problem of morality is therefore a problem of progressive advance towards a more complete adjustment to environment. In the process ideas of duty and obligation take their place as offering the most feasible means of attaining this end. Environment is in the civilised society of our times a complicated network of interdependent social relations. The technical achievements of applied science have made possible the agglomeration of a vast urban population which now dominates social life. In the industrial civilisation of our times it is the social relations of city life that are the most important in a summing up of the factors of environment. This requires not only a revision of our ideas of duty and obligation, but of our sale of values, based as they are on the moral code of a religious world view. We have to revise our notions of morality in order to fit them to the new scientific world in which we live.

The effort to cramp the industrialised society of our times within the narrow limits of the religious moral code

can lead only to maladjustment, which in our view defeats the ends of morality. Science would bring into play the new psychological as well as biological and other knowledge gained, in order to give to human life a deeper significance, a truer understanding of its nature. We would reflect once again upon the problems of morality and build up a world view that takes into account the social milieu in which we live, and the function and purpose of life as we know it. Hence a critical examination of the principles of conduct, guided by the most enlightened reflection we can bring to bear, is necessary.

The religious code of morality, though of undoubted value in its day, no longer offers a valid basis for a good life in an industrialised society which accepts science as its guide. Science is making it clear that the principles of moral life are not imposed from without by some divine authority, but spring from within the heart of man, are part of this thing we call life. Life itself in the mere living of it, is a fulfilment of the good in some form. And even if all the moral ideas that we may set forth will not be able to prevent evil from coming into the world, nevertheless we may see that in a progressive morality the kingdom of evils is being continuously narrowed.

Morality depends for its spread not so much on offering a wide range of choice, as by showing clearly that given the stage of our knowledge, the use of this knowledge makes possible a better adjustment to environment that leads of itself to a good life. Externally imposed morality, though essential in a more primitive society, grows irksome to man when he comes to reflect upon his place in the world. The living of life leads inevitably to such reflection sooner or later when the value of our acts is called into question, when the path of duty seems too

difficult, and no clear ideas of obligation are available. Here the absence of some ethical principles of a constructive nature makes for mental maladjustment that leads from perplexity to utter despair as to the ultimate values of life.

VII

In a period of transition such as our own, right conduct is no longer reflected in the mirror of our existing moral code, based on a traditional religious world view. And though many may be satisfied with the solace that it is divinely sanctioned, an increasing number realise the emptiness of its edicts that no longer can be implicitly obeyed. The consequent conflict between ingrained ideas of reverence and the demands for a better adjustment to life as science is daily revealing it, will lead in the end to the triumph of the scientific method as affording the best way out of our difficulties.

In the struggles that take place in our conscience a bold spirit of enterprise is often awakened that urges us on to seek new paths of adjustment. We are not content to retain values just because they have been realised, but rather we seek a higher good than that achieved in the past. Morality is thus ever progressive, alert and active in order to find a way to a better adjustment of the individual to the world of which he is a part. Thus the world is being continuously moralised. Many things which in the past were left outside the sphere of morality are in the scientific world view being brought within the range of moral action.

The new morality is no longer world-denying. Life in itself is among the highest values. This life is worth living in so far as we seek a better understanding of the highest attainable good in the social milieu in which we

live. It is in adjustment to this milieu that science comes to the rescue and shows us that what in the past were considered evil and sin are more often than not due to physical defects or disease, in many cases remediable. Under the circumstances it is not surprising that our whole moral attitude should be changed as a result of the lessons that science is teaching. The influence of science on morality is incalculable. Morality has become forward and outward looking. It no longer would have us accept things as they are, but gives us a valid reason for believing that the "ought to be," which is the first concern of morality, can be realised.

Morality is thus a way of life. It differs however from mere experience in that it is not any and every way of life, but the best possible way, given the social environment in which it is led. It is to morality that we must look for the spiritual bond that gives to life a sense of unity and purpose, and differentiates it from a mere collection of experiences. Though the scientific world view is based upon experience this does not mean that experience is an end in itself, but rather that we may build upon it a synthesis of conduct which will be moral.

Morality must justify the living of life, freed from any ulterior supernatural motive. It would point out a way to attain the highest values through social adjustment. It is based on a scientific world view, and its mandates are subject to verification and claim no more than to offer a working hypothesis for conduct. Morality is not a panacea for the ills of society. These ills are inherent in every system of social relations. But like all physical defects they are with the help of science potentially curable.

The history of morality shows us a slow but continuous improvement in methods of social adjustment. We are

not immediately concerned here with this aspect of the problem. But it is important to bear in mind that morality belongs intimately to life, and changes as the conditions of life change. When once we have rid ourselves of the false duality of an earthly and heavenly morality the problem of devising a new moral code is greatly simplified.

VIII

The world in which we live is the moral world. We need not distract our attention from the good in this life by comparing it with a better life in heaven. On the other hand what we should concern ourselves with is the problem of individual maladjustment which transforms the good of this world into evil. The problem of evil is man-made. Its origins are physiological and psychological. In our effort to adapt to our social environment with no sound rules to guide us, and the imperfect state of our knowledge of personal and sociological factors, it is not surprising that evil should bulk so large on our horizon. But the difficulty here is largely due to the confusion that exists in regard to our ideas of the relations between natural forces and experience. They do not belong to the same system, and therefore have no real means of contact.

An earthquake may destroy human life, cause distress and suffering, but we no longer seek to explain it on moral grounds as a punishment for past sins. Geology and morality belong to two different world systems, and have nothing to do with one another in so far as direct influence is concerned. It is only by drawing a false picture of their relation that one such set of realities can have influence on another. Science is teaching us the wisdom of confining within its proper sphere a given scale

of values. Thus an earthquake possesses a meaning of its own; it is a geological fact and as such devoid of moral characteristics. We are learning not to disregard the especial conditions attaching to given circumstances. We are coming to understand that man may transform many things, but only so long as he uses appropriate forms of activity, devises a technique suited to the problem in hand.

It is not intended to imply that morality does not belong to the world of factual reality. On the contrary it is an inherent part of this reality, but it belongs to a different category from that of an earthquake. And though the realm of morality is being constantly extended, this should not prevent us from recognising the dividing line between moral and non-moral forces.

Morality has to do with human life and flows out from the individual as his contribution to reality. It is the added fact in the factual world that makes possible the higher values of life. It is in the nature of a bond that unites the individual to his world, and gives to the values there discovered their unique character. The individual himself does not create these values, but in his relationship with the world in which he lives he comes to recognise the values attaching to it. Morality is furthermore essentially militant; it is mind seeking out the good and avoiding the bad. It reveals the individual in action.

The possibility of the bad winning the day over the good, is due to the fact that an alternative course is offered before action is possible. The bad is presented to consciousness as somehow good under the special circumstances which confront the given individual. And though the evil course is followed, it is never deliberately followed because it is in itself bad, but rather because owing to imperfect knowledge, insight and judgment it is

held to be good. Though the moral purpose may be perverted, it remains the dominant motive of all living.

IX

Morality never exists in the abstract, but only in the concrete sense. It comes into being in an event. Thus morality is not a part of the objective world of space and time but is a creative activity continuously emergent. Morality mirrors the efforts of the individual to adjust himself to his environment, and in the process a scale of values emerges which points to the one best way to live a good life.

It is therefore difficult to analyse morality, for to do so breaks up its unity into a subject and object relation, which is foreign to it. Morality is all of a piece, and its meaning is derived from a synthesis of human relationships. Though we may for convenience sake set down a list of moral qualities we can see that this list can be only temporary.

It thus becomes clear to anyone that the older moral virtues of a religious moral code, poverty, the penances of the flesh, sack-cloth and ashes and the like, lose all significance in the scale of values of present-day civilisation. In the same way self-realisation, in the religious interpretation of the term, the highest value that religion has to offer, seems to a more fully developed social consciousness fragmentary and unreal. In point of fact it is only when morality emancipates itself from religion, or as we may even say, supplants religion as it is doing to-day, that human life assumes a dignity and value of its own.

Modern man is a thinking being. His progressive cultural advance has been an intellectual process. He is continuously putting two and two together and finding that

four has a reality of its own, that new values emerge that did not exist in the past. There is nothing in morality of the already made; it is continuously in the making. It accompanies the evolutionary process at every twisting and turning, and is ever present, eager to point the way to new values. Though "life in itself," to use the words of Count Hermann Keyserling, "is absolutely without aim or purpose. It is a free outpouring, a growing and giving, a clear striving for even fuller expression in which the idea of a purpose and the purpose itself are only a hindrance," we would add that morality lends to life this much needed purpose, without which we could not carry on. It gives to life a working hypothesis by outlining values that are desirable and profitable to it.

In this way it will be seen that given the scientific world in which we live a new hierarchy of moral attributes is required. The primitive religious symbols of morality are no longer sufficient. The effort to bridge the gap between the modern scientific spirit and the older religious world view such as we find it in the moral code of political society is inadequate. The abundance of worldly wealth, due to technical efficiency, and the achievements of science, must be taken into account on moral grounds.

It is not surprising that the Western world has grown tired of Christianity, in that it no longer satisfies the needs of men who are eager to find in science a source of spiritual inspiration, an enlargement of the basis of life. Many are ready to acknowledge that morality has in our times taken on a new significance; that it demands a new type of loyalty and allegiance in which the social duties of mankind take precedence over individual salvation; that ideas of immortality belong to a different category of reality which has nothing in common with the practi-

cal aspects of moral duty or obligation as we understand these terms to-day.

In conclusion we would add that there is no reason for subscribing any longer to the belief that some moral ideal exists, eternal and unchanging in the mind of God. On the other hand good and evil are not mere figments of our way of thinking, as Spinoza would have us believe "shadows cast by our desires upon the impenetrable barrier of natural law." But rather morality is what distinguishes life as purposive. Purpose is revealed in the adaptive behaviour which is constantly seeking to realise a closer harmony, a nicer adjustment between the individual and his social world.

Morality like life never stands still. It tolerates no *status quo*. The man who thinks can potentially always think of a better way, and it is this way that morality lies. The religious way has served its purpose. In its day it was no doubt the best way. But now a new way is being offered to us founded on a scientific world view.

Here morality emerges, clad in a new dress, pursuing new aims, pointing to a new way of living a good life. Science and morality join in endowing life with a new purpose through which the highest values are to be attained.

BOOK III

CHAPTER I

The Psychology of Morality

I

A PARISIAN shop-keeper who charged an exorbitant price for a blank note-book, by way of justification remarked, "Mais, Monsieur, c'est un livre extraordinaire. Vous pouvez écrire là-dedans tout ce que vous voulez." We approach the problem of outlining the moral aspects of the scientific world view in a similar spirit. The note-book of science is an extraordinary book. Its pages are still for the most part blank. We must somehow fill them in, and write about matters which at every turn will arouse opposition and bring to mind traditional arguments to refute the new position taken. But if it does no more than lead the reader to give the question some mature consideration, to re-examine the premises of his own private world view, the price paid will not be too high.

Ideas precipitate acts. An idea introduced into mind acquires its driving power in proportion to its ability to dominate consciousness. In the competition of ideas that battle for supremacy the conclusion we reach manifests itself in some form of behaviour.

We are all of us inclined to favour our own ideas. If an idea can slip into the mind so to speak unobserved, and be assimilated before its alien nature is discovered, we make it our own, nurse it, cherish it until it takes on the tone of being native within us. Ideas set in motion

the whole process of behaviour, which has as its object the adaptation most appropriate under the circumstances. Behaviour takes into account not only the ideas that control it, but the social environment. Much of our behaviour is non-social, that is, it is not the result of the presence or influence of others. All such behaviour has no moral implications.

Morality is distinctively a social product. It arises when we come in contact with our fellows. It is a matter of social participation, of adjustment to social environment. Here ideas of duty and obligation, a scale of values take shape that go to make up our moral code. When we look for the psychological foundations of this code, we discover a wide divergence of opinion as to the nature and character of social behaviour.

The study of social psychology is still in its infancy. There is little agreement of opinion in regard to the conclusions to be drawn from the diligent investigation of the physiological basis of our fundamental activities. Instinct and habit, feeling and emotion are being interpreted in various ways. Great progress has been made in accounting for what in the past appeared to be anomalies of conduct; they are now ascribed to definite pathological causes. Seen in this light the whole subject of morality must be revised. Immoral acts take on a new meaning. Sin itself vanishes from the world as no longer an adequate term to describe conduct that can be explained on psychological grounds.

The normal individual who is naturally sensitive to the needs of social life and in consequence is continuously repressing his purely egotistic inclinations, develops a moral consciousness, a sense of social participation and responsibility by adjustment to his environment. On

the other hand unbridled self-interest, an aggressive self-seeking characterises what we to-day recognise as immorality. Immoral behaviour is marked by a more or less complete absence of sensitiveness to social influences. Criminals and the delinquents in general are recognised by their egoism. Non-social behaviour, maladjustment to environment are in a broad sense the true causes of immorality.

II

The explanation of conduct and of the drive of ideas are in the first instance psychological problems. Behaviour and consciousness are explicable if we take into account the physiological as well as the psychological factors that go to make up what we call personality.

A person is a moral agent; the individual in his relations with his fellow men. Here morality comes into action. We have in personality gathered together not only the experience of the past as stored up in memory, but the achievement of the present, and a plan and purpose for the future. A strong personality is marked by efficient social adjustment, success in adaptation to social environment. It is one that is sensitive to social influences and knows how to exploit them. A weak personality is unable to achieve such adjustment, lacks unity of purpose and social adaptability. Personality has nothing of the already made about it. It is unceasingly in the making. Ideas and beliefs are its instruments. It is here that the pattern of life is to be found. Here we discover the value of human effort. Civilisation is its product, and in turn civilisation reacts upon personality, shaping its purpose in order to lead to the fulfilment of what is considered to be the highest good. As long as such purpose

is pursued, a civilisation flourishes. When once it comes to be neglected, history shows us that a given civilisation decays.

The social world is thus a personal world. Personality is a purely mundane affair. It is the individual in relation with other individuals, the self with other selves. "The waking have one and the same world, but the sleeping turn aside each into a world of his own." These words of Heraclitus express our view that the individual as such, isolated and alone, is devoid of personality. It is only in a social milieu that personality comes into play. Here the question of morality comes to the fore.

III

The psychology of morality may roughly be summed up as an interpretation of the personal motives of social behaviour. All behaviour as such is not the object of moral consideration. Among the lower forms of life, the ants and the bees for example, and even such group adjustments as we find in the herd, behaviour which on the surface appears to be social does not raise a moral issue. It is not until we reach the level of personality that the question of morality confronts us, that behaviour is not immediately referable to the advantage or disadvantage of the individual, but takes into account duties and obligations to one's fellows.

The problem as to what makes men moral finds no direct solution in the study of the psychological aspects of morality. All we can expect to discover here are some of the motives of behaviour which we recognise as moral or immoral. But this is in itself a great step in advance. The new psychology offers an insight into behaviour which otherwise would remain incomprehensible. It takes into account the actual capacities of

the individual, it estimates his mental make-up, it reveals his neural reactions, and thus can interpret the causes of maladjustments in terms that free the individual of deliberate responsibility, and show the way to corrective measures that will afford better adjustment in the future.

It is often asserted that psychology has nothing to do with morality, as psychology does not concern itself with values, but merely seeks to disentangle, and if possible describe the complex relations of mental life. But unless we have some clear notion of these relations no adequate understanding of morality is possible. Furthermore the relations of mental life are not mere brain events, but take shape in the form of behaviour that has a social character. The drive of ideas, the response to appeals have a social significance, take on a moral tone and act as the incentive in order to realise a better adjustment to our social milieu.

Morality, however, detaches itself from mere individual behaviour and would discover a world of values, mark off the distinctions between the good and the bad, point out duties and show the way to the fulfilment of obligations. Here morality goes beyond psychology and offers a synthesis of those factors of human behaviour which psychology can do no more than analyse. We may apply in practice the theories of psychology, and offer an interpretation of the meaning of life rooted firmly in scientifically ascertained facts.

Morality would take over the knowledge gained by psychology and add to it a qualitative content or personal value. The truths that psychology discovers are commensurable data. Morality would add to these a new set of relationships in which personality, as we have defined it, may play a predominant part. A scientific moral code contains nothing more than the most efficient,

or if you prefer, the noblest ideas that can be distilled from the heterogeneous psychological data offered. It would present a ground-plan of convictions most favourable to action.

Science offers its services as a guide. It does not claim to reveal reality. In fact revelation as such is rejected at the outset. Science would merely afford the most accurate description possible of events in their orderly sequence. It has no other purpose than the realisation of the most efficient technique. Thus a scientific moral code is not something that is revealed through a Sermon on the Mount or on a Mount Sinai, but is based on psychological considerations, that for the time being are unqualifiedly true. Such a code does not seek to lay down the law in the form of commandments and offer a system of rewards and punishments in some extramundane sphere. Rather it would take into consideration the psychological knowledge that has been gained in order to regulate conduct in accordance with what we know to be the true motives of behaviour. There is here no immanent God or power of any sort in the background. There is no other source of moral action than the drive of ideas and the impact of social influences.

Science has already banished most of the hopes and fears that in the past befuddled the moral consciousness of the individual, and made him accept blindly his fate as though it were something foreordained. The idea of original sin is as trivial in the light of science as is that of ghosts. At the same time it is an error to accept any longer the notion that the spiritual content of man's nature is a revelation of an eternally perfect reality that is of God. The only reality we need here concern ourselves with is that of the social milieu in which personality thrives. All other speculations about the nature of the

real world are superfluous. No reasons are necessary to prove the existence of this social milieu. It exists as a matter of fact. Out of it flows the necessity for action; into it flows the impulse for further growth and expansion as our personal contribution to life.

IV

The world in which social life has its being, is a world of momentary experiences and emergent events. It is out of these experiences and events that ideas to which mankind attaches the highest value arise, around which cultural institutions cluster. Though the form of these institutions may vary from age to age, and people to people, their underlying purpose is to make possible a good life. Thus wherever we may look in the social life of mankind, the purpose is invariably moral. Man seeks the good, the best way of life as an unceasing quest, in spite of failure, often repeated, to attain it. This quest is a psychological problem. A clearer understanding of the nature of mind and consciousness of the drive of ideas, of the impulse to action and social co-operation, will make possible a more profound understanding of the nature of morality.

The function that thought performs in the moral sphere is something more than mere *knowing*. It requires the *knowing how* to amplify it. This knowing how is the added moral factor. In this way morality need no longer be like a mysterious, underground, burrowing prisoner that is blindly seeking a way to freedom. Morality is not something within us, which it is more or less fashionable to be ashamed of, that when we let it out walks about like a priggish and prudish Mrs. Grundy, thwarting our pleasures, checking our desires at every turn. On the contrary, if psychological considerations are

taken into account, morality makes possible a newer, fuller enjoyment of life. Seen in this light morality will no longer be confined to the respectable, but can even hope to become fashionable, when it is more widely understood that in the scientific world view there is no inexorable law of good and evil, truth and error. Science is teaching us that a law of change must replace that of an unvarying causal chain. Psychology takes note of individual variations and changes. It discovers distinctions and differences in the causal series in which that little understood element of personality—in itself a complex and intricate system of relations—plays a leading part.

V

The stuff of which morality is made belongs both to the mental and to the physical world. It is the outgrowth of the relation of body and mind. Though morality in a sense belongs to both, yet it lies above and beyond either, in that it would offer a synthesis of conduct in the form of a plan of living that will afford to the individual the best opportunities for leading a good life, for realising the highest known values.

Psychological study shows that the pathway of life leads through a jungle of events that take on the character of being good or bad, valuable or harmful in the measure in which they assist or thwart the development of personality. Here the old problem of the relationship of body and mind takes on special significance.

Beginning with the animistic dualism of Descartes down to the emergent theories of Mr. Lloyd Morgan, who seeks to find a place for mind and reflective thought as new qualities of life, we may trace the effort to account for the moral nature of man by uniting the processes of thought, however abstract, with the physical origins of his

emotional activities as revealed in the development of personality. We would suggest that it is in the adjustment of the individual to his social milieu that the moral nature of personality is revealed.

The whole trend of moral behaviour is towards the preservation of the best of life. Morality sketches out a working plan in order that the individual may adjust to his social milieu and get on in the world. The fact that this plan has in the past never been traced with any greater degree of accuracy is due to the confusion that exists between thought and things. We are now coming to realise that at best thoughts are but feeble mental reconstructions or more or less fantastic elaborations of the outer world. Further psychological inquiry is revealing that the function of mind is that of an adaptive mechanism.

It is idle to seek to define goodness, justice or mercy, as abstract moral qualities that have a real existence of their own, according to a divine pattern or model. The difficulties of adapting to one's social milieu are due largely to the failure to distinguish between these mental abstractions and the world of values that has concrete existence. Experience teaches us that we may come in contact with a good thing, a just man, a merciful woman, but that it is purely a personal relation. Goodness, mercy or justice as such have no actual existence in the world of values. What goes by these names emerges under special circumstances in given events.

VI

There are thus two levels of morality, if one chooses to express it so, the individual and the social, dependent directly upon types of behaviour, whether self-regarding or other-regarding. We may trace in the evolution of

moral action as we ascend the cultural plane, a continuous advance towards a social type of morality. Whereas under a primitive moral code self-preservation is the first consideration, and the looking after his own salvation is the principal concern of the individual, subsequently social interests come to occupy first place. Here we see a striving to reconcile the transient life principle inherent in the given individual, with the idea of an eternal life, which is social. We have now reached a stage where ethical religion takes over the code of morals and seeks to unite the two by offering a plan of action that will insure individual immortality.

The chief characteristic of life is that it reacts to its environment. Living becomes a purposive process which has for its object a modification of this environment. As long as man remains subject to his environment, is swayed by fears of an unknown world about him, the level of moral action remains individual, his activities are self-regarding; his purpose is to muddle through somehow and conserve his interests. Though the codes of religious morality offered may seek to point the way to altruism and develop other-regarding ideas, their chief purpose is still to look after individual interest. It is the individual soul that is the first concern, and only indirectly are good works taken into account. These are credited to the individual. The social level of morality requires that a distinction be drawn between the values of reality that emerge in a world of events, and those of phantasy which so readily take possession of the individual mind.

The scale of values of the religious world view is determined by the desire of man to make a livable place for himself in a hostile world of nature. He invented magic and religion as a dreamer of dreams constructs castles in Spain, and found solace and subsequently an

energetic driving force in the ideas which had slipped into his mind, and had there found a native soil in which to flourish. As Frazer has pointed out, "Men mistook the order of their ideas for the order of nature, and hence imagined that the control which they have or seemed to have over their thoughts permitted them to have a corresponding control over things." [1] As long as the individual ascribes undue importance to the power of his thoughts, and confuses their sphere of activity with that of objective reality, the self-regarding level of morality is not outgrown. Beyond this stage religion cannot go, as in spite of the semblance of objective reality with which its ritual and cult is clad, its ultimate values belong exclusively to the realm of thought.

With science it is different. Though theoretical science is in the first instance a thought process, a method of inquiry in order to find a better way, this way once found can have practical application in the world of objects in which we live. Science is by definition other-regarding. Its method and purpose is never that of any given individual. It is never satisfied with any individual tests of truth and disregards the individual as such in order to deduce a general law that may be valid in itself.

Science looks upon the world of experience as a testing ground. Abstract concepts are tried out here and subject to all manner of searching inquiry to see if they will stand the stress and strain. Only thereafter are they incorporated in the body of scientific truth. Nor is their place there permanent. Science is continuously in process of revision. The revised edition takes into account the new knowledge that has been gained from a closer and more accurate scrutiny of the facts. We find a progressive modification of principles in order that they may fit

[1] Cf. *The Golden Bough.*

in better with the objective world. In the same way science would show that morality requires a continuous revision in order to realise a smoother functioning of social relations that will eliminate the causes of conflict between the individual and his environment, iron out the difficulties that stand in the way of harmonious adjustment, and secure in so far as possible a maximum integration of the individual in the social order.

Here psychology offers valuable assistance by examining in a scientific spirit the causes of maladjusted behaviour, and pointing the way to more closely adjusted social relations. Without a full and clear understanding of the underlying psychological factors that determine conduct no great progress can be made in the direction of a higher morality. This is the goal towards which we are striving when once we have adopted a scientific world view.

VII

The idea that self-interest is the psychological basis of morality and that social relations are maintained in order to insure tolerable conditions of life, without which life would be, to use the words of Hobbes, "solitary, poor, nasty, brutish and short," a view that has been ably defended in recent times,[1] would appear to be based upon a fallacy.

Though man is not by nature social, and is on the contrary self-regarding and self-seeking so that nowhere do we find such a thing as a social instinct, yet the whole course of civilisation is nothing more than an education in socialisation. If man can be civilised he can be socialised. The stage of civilisation reached is the measure of

[1] *See* F. Le Dantec, *Egoisme, Seule Base de Toute Société,* wherein the author claims that the individual permits his ego to be deformed by necessary concessions to other individuals as this accrues to his own benefit in his defence against his enemies.

his socialisation. The degree in which self-interest is subordinated to duty and obligation is the high water mark of the cultural level of a given civilisation. Human progress in spite of many set-backs is ceaselessly striving to reach a higher level. The stage of social efficiency attained can thus be measured by the degree of subordination of the individual to the needs of the social order.

Adam Smith had taught, and the men of the 19th century down to our own day believed, that the individual following his own interests unintentionally attains the highest social good. In like manner Bentham and other utilitarians after him denied the value of social development, and declared that the "sacrifice of interest to duty is neither practicable nor so much as desirable; it cannot in fact have place; and if it could the happiness of mankind would not be promoted by it." [1]

Such views as these are readily explicable when we take into account the rudimentary nature of the psychological knowledge that was available. But we to-day can see that while the individual remains the central figure, and the social order is composed of individuals behaving in a definite way, this social behaviour is based on premises altogether different from those that dictate individual action. Social behaviour must be once and for all separated from mere individual acts that are non-social. It is the province of psychology to point out these differences. Though at first sight this may appear to be an invidious task, recent studies in social psychology are showing that much of our social conduct does not belong to the individual but is due directly to his environment.

Just as we are beginning to understand that intellect and emotion are not in themselves entities, separated and distinct, but mainsprings of behaviour that are inter-

[1] Cf. J. Bentham, *Deontology,* Vol. I, pp. 10-11.

twined, so we are learning that social conduct and morality are bound together by ties that cannot be severed, and that all social acts are potentially moral, just as all morality must be social. To be moral is something to be learned by the individual in his contact with his environment in order that he may take advantage of the opportunities offered. The method of science would show the one best way to do so. It has created and is creating a new social milieu. It is presenting to us new conditions, finding new paths of expression, instilling new ideas that become the driving impulse of our individual selves. What is now required is the assimilation of these factors with the body of beliefs we have taken over from the past.

VIII

Materially and mechanically we have forged far ahead of our ability to moralise the new scientific world in which we live. Morality is still to-day clad in its mediæval coat of mail. It has scarcely been revised since the days of chivalry. Much that we call moral is in fact little more than the remnant of a code of conduct suited to the behaviour of the Knights of the Round Table. Many of us realise vaguely that we are in the midst of a moral revolution, that a great schism is taking place owing to the breakdown of the traditional religious morality. Few understand as yet that the scientific world view which they have adopted demands a complete revision of their moral code.

The world of emergent events in which we live is no longer the older world of space and time where individuals move as across a stage and have a history, but are, somehow separate and distinct from this time, space and history, so that the individual is one thing and his history is another. In the newer scientific interpretation space,

time and history are nothing in themselves other than integral parts of individual behaviour in a given social environment. The behaviour of each one of us must be looked upon as in the nature of a working hypothesis, a part of the stream of events in which cause and effect are merely interpretations of a constant flux and change. The spiritual values that are supposed to be the attributes of the individual are as a matter of fact inherent in events in which he plays a part.

The scientific attitude requires that we recognise these changes. It is inevitable that in the process the bonds of social tradition and custom should for the time being be loosened. But this does not necessarily mean that the civilisation of the Western world is on the brink of destruction. On the contrary, it would appear as though we were making ready to go forward along new paths in order to realise the rich promise that science seems to offer, if in some predictable way we can establish on a firm foundation the tenets of a new moral code.

Science must be brought into communion with the spiritual aspirations of man. It must no longer be looked upon as an alien, ugly in itself, heartless, brutal, a blight in a bright world of natural beauty and delight. The distrust of the scientific spirit must be overcome. It must be made plain that the knowledge that psychology would offer does not frustrate the aims and hopes or the aspirations of mankind, but rather that by interpreting them more accurately it will make possible a deeper understanding, a wider sense of moral freedom.

It is high time that the mould of the new morality be opened in order that we may see what the new model of moral conduct may have to offer. We would therefore examine in the light of science the fundamental motives of morality.

CHAPTER II

The Love Motive

I

In its simplest terms morality rests upon the love motive. Love, the spiritual aspect of the sex drive, is the primitive impulse towards social adjustment. It is here that human conduct differs from that of all of the other members of the animal kingdom. Love is a distinctively human characteristic. As we ascend the cultural plane we discover that the love motive, at first only crudely differentiated from sex, becomes more complex, takes on shades of meaning that we recognise as religious, ethical and æsthetic. All that is good, true and beautiful in the world as we know it has its origin in the love motive. Throughout the ages we may trace a gradual development and expansion of this motive as the guide of social activity.

The evolution of the idea of love forms one of the most important chapters in the cultural history of mankind. Here the human spirit shows itself at the height of its powers. Here the idea of humanity, altruism and all of the other high hopes of civilisation have their origin. The Christian doctrine, "Love thy neighbour as thyself," is the highest expression of religious morality hitherto attained.

We may test the degree of culture of a given people by the place that love occupies in its scale of values. In love, body and mind are joined and out of the impulse

to give oneself to another, to sacrifice oneself for another, to devote one's life to others, flow all of the highest values which we recognise as moral.

In the past an effort has often been made to separate love from its sexual background. Love in this sense was conceived of as something exclusively spiritual, detached from the flesh of which it is the natural offspring. Poets wove marvellous tales about the love theme, sang of a love-life full of mysterious beauty in which the acts of lovers and the influence of the passion of love are vividly portrayed. They would hold up a mirror before us in which we may see reflected our own longings and desires. Literature, art and religion show a continuous effort to elaborate the love motive in order to awaken a responsive chord in our own hearts, to offer satisfaction, however vicarious, for the fulfilment of the ideal of love.

It is only within recent times that love and more especially its sexual background have been scientifically investigated. This accounts for much of the change that has taken place in the attitude towards love. For the time being the sexual aspects of love are the chief interest. Science is as yet far better equipped to deal with the concrete manifestations of sex than with the abstractions of love. Thus in spite of the passionate interest in love affairs, in spite of the emotions that the word *love* arouses in us, in spite of the repeated analyses of the love life of individuals, the confessions of lovers or the high moral lessons that true love would teach, no systematic attempt has been made to find a place for the physical as well as the psychical love motive in the moral world.

II

Love is inextricably bound up with sex, which in the Christian world view was held to be immoral. To many

the word *morality* still means little more than sexual conformity, not to say continence. According to the strict Christian code even honourable marriage ranks below the purity of intact virginity. Immorality is more or less synonymous with sexual promiscuity; a non-conforming attitude towards the standards of religious morality.

As long as these standards remained undisturbed, as long as the need for such a code was still vigorous, individual lapses had no great significance. But when this need vanishes, we come upon periods of what are called moral laxity, which manifest themselves openly as a revolt against the older standards of morality by which the love motive is bound.

During the Renaissance, and again in our own times, we see examples of such revolt. Civilisation offers a fuller scope for the development of sexual expression which in time gives to love a new meaning. No more striking evidence of the need of a new moral code can be found than the confusion which results from seeking to adjust the new love motive to the older moral code. We would here set forth in bare outline some of the salient features of the problem that may throw light on the love life of our times, and show the insufficiency of the standards of morality that have been inherited from a pre-scientific age.

III

It is an error to hold, as is still so often done, that human nature is everywhere and at all times invariably the same. Whereas there is a certain outward similarity between modern man and his civilised ancestors, scientific study shows us a continuous modification of traits that go to make up what is called human nature.

The customs and practices of primitive and savage peoples make it possible for us to measure in some degree the changes that have taken place in human nature by comparing them with those of our own or other high civilisations. It is precisely because human nature is capable of change that a progressive cultural development is possible. This development manifests itself most clearly in the love motive.

It is thus no longer adequate for us to study the authors and moralists of classical antiquity or even of our recent past in order to find guidance in our own moral world. Sociological inquiry reveals that every civilisation has a love life of its own that accompanies its cultural evolution. This love life is complete in itself as far as it goes, and when the given civilisation vanishes, its love life dies with it. A new love motive grows up with the new civilisation.

We may trace in the history of civilisation a continuous effort to arrive at a better adjustment of the love needs of the individual and those of the race. In so far as this adjustment is adequate, in so far is love the bulwark of morality. Without going back to classical antiquity we may confirm this view by an examination of what has been taking place in the Western world since the Renaissance and the Reformation.

The exuberant life of the Renaissance, its creative richness based on a greater economic prosperity than had been hitherto enjoyed in Europe, manifested itself on the side of human nature as a revolt against the prevailing love motive of the religious world view.

IV

According to the Christian doctrine love was an exclusively spiritual affair—the love of God—and all sexuality

was the handiwork of the devil. As long as rural life with its hardships and social isolation prevailed, there was scant opportunity for the problem of sex to become insistent. But with the rise of an urban civilisation and the important place that secular interests came to occupy, the restraints of the religious creed grew irksome. At the same time religion as the principal interest in public affairs was sinking to second place. The rampant individualism of the Renaissance found in sex a channel for expression which was denied to it by the Christian moral code. The creative powers of the individual, closely connected with his increased sexual freedom, found an outlet on the one hand in artistic production, on the other in a heightened sense of his own personality. How to integrate sex with love now becomes a pressing moral problem.

Human nature had, so to speak, turned a corner. Though the religious world view still dominated, and sex and sin were inextricably linked together, a way out was sought that would give to the love motive a broader basis which might include the sexual urge without condemning mankind to eternal damnation for following impulses that were somehow obscurely realised to be natural. The result was the Reformation.

A new love motive was sought, and Luther set to work, guided by the principle that "the lusts of the flesh are invincible." Here is original sin. But if the lusts of the flesh are invincible, and the demands of sex are not to be gainsaid, Christ is ever ready, eager, willing to redeem. Sin, or sex as Luther saw it, is the lot of man, but redemption and salvation are at hand if you will but believe in Christ. "As it is not in my power not to be a man," exclaims Luther in his Sermon on Marriage, "so it does not rest with me to live without a woman."

While St. Teresa found a way out in her direct union with Jesus that has in it all of the marks of a physical act, Luther gave full rein to the lusts of the flesh, incited priests to marry, opened wide the portals of convents and monasteries, and offered a way to satisfy the urgent sex drive without incurring eternal damnation, provided that each and every sinner grasped the opportunity offered to him to be saved through Christ.

Religious morality here sought a broader basis for the love motive, but it was only partially successful. The idea that sex and all of its manifestations are sinful, remained. After the Reformation love was, so to speak, brought to earth, but sex, though surreptitiously recognised, was banished from the scene, and had to be content with a back-stairs rôle. A reaction against Lutheran sensualism soon manifested itself, and the influence of Puritanism with its rigid, passionless moral code undertook to exclude all sexual and other pleasures by a total suppression of outward emotional life.

V

The direct heir of Luther in bringing about a closer union between love in its spiritual aspects and sex was Rousseau. More than two centuries had elapsed during which the religious world view was slowly being discredited. The social importance of science was coming to be felt though not understood. We are on the eve of the practical application in industry of the discoveries of science which were destined to transform social life. The last traces of feudalism and of the unequivocal authority of religion were about to be swept away by the French Revolution.

The 18th century was an age of artificiality which retained the outer forms and conventional proprieties of

the religious moral code, though it scoffed at religion and mocked its ceremonies and cult. The love life of the times was bound by a rigid etiquette which did not prevent a most frivolous and libertine attitude in sexual relations. Into this world of a stereotyped and conventionalised sex morality Rousseau burst with his jumbled ideas of natural love and a sex life that knows no bounds but its own desires. He made himself the prophet of nature and natural law. He elaborated the idea of a social contract to explain how social relations arose, and sought to lay the foundations of a new morality in which love in its sexual as well as its spiritual aspects should become, as he expresses it in *La Nouvelle Héloïse,* "la grande affaire de notre vie." The love that Rousseau preached made appeal to a higher law than that established even by the Church. It looked to Nature as a controlling deity that was superior to the Godhead of religion.

Rousseau's message did not fall on fallow ground. The time was ripe to receive the new gospel of love in which sexuality was to be recognised as something sublime in itself that was not to be crushed and repressed, but made use of to spur the individual to higher achievement. In this Rousseau did not stand alone. The sentimental school of novelists in England that produced a Sterne and Richardson, Goethe in Germany and the romanticism of the early 19th century, are all part of the same movement in which the individual was seeking to express his personality through the channels of his sexuality.

A place was now made for sex in the life of the individual. Reason was no longer to be the sole guide. "Les penchants du cœur" were to be allowed a place. The older rules and regulations of a rationalised religious morality had grown inadequate, but as yet no others had been found to take their place.

"Jamais homme, écrit encore Jean-Jacques en parlant de lui-même, ne se conduisait moins sur des principes, et des règles, et ne suivit plus aveuglement ses penchants. Prudence, raison, précaution, prévoyance, tout cela ne sont pour lui que des mots sans effets. Quand il est tenté il succombe; quand il ne l'est pas il reste dans sa langueur." [1]

To estimate aright the part played by Rousseau we must realise that his function was to destroy the old order of things. His was the task to uproot the last surviving vestiges of the love motive of the Middle Ages, of that chivalrous type of love which though possibly suited to a feudal system, had no place in a modern world in which women were making ready to play an active part. This accounts for much that seems exaggerated in Rousseau's sentimentality.

The hypocrisy of the "love pose" inherited from the feudal age, which made of man a gallant, of woman of his own rank the mistress of his heart whom he defended in the lists, and sacrificed himself to in the "courts of love," had no proper place in the modern world. The traditions of gallantry and the artificial courtesy towards women as the weaker, the inferior sex remained, which had to be swept away before a new conception of the love motive could take its place. We would not claim that this was the conscious purpose of Rousseau in giving us the *Nouvelle Héloïse,* and his *Confessions,* but rather that he initiated the movement that was to emancipate love from the false gallantry and conventional proprieties that prevailed. The *Weltschmerz* of Werther was a further step in advance along the path of the emancipation of love that led directly to romanticism.

Henceforth love becomes a personal affair, a channel

[1] *Rousseau jugé par Jean-Jacques, Deuxième Dialogue.*

for the fullest expression of unrestrained sexuality. The love motive is linked with the new idea of personality, a part of the broader movement towards individual liberty and equality that characterises the 19th century. In the process sex is in a measure emancipated from the stigma of sin, and joined with the spiritual idea of love to form a coherent whole.

The romantic love of the early 19th century makes way for the realist love motive of the opening years of the 20th. For the first time the problems of sex are investigated and discussed in a scientific spirit. Place is made for the sensual in man as an inherent part of his nature. A new psychological approach to the sex question is undertaken. The importance of the sex drive as a cultural factor is acknowledged. The close connection between the sexual impulse and the productive capacities and energies of the individual is adduced. A scientific foundation for the study of the phenomena of sexuality is laid, and new interpretations are offered that reveal the social importance of the love motive of which sex is now recognised as a component part.

VI

Love as we understand the term to-day is in the nature of a personal experience that grows out of the sex impulse. The love motive cannot be separated from its sexual background. Love is the social, sexuality the individual factor of one and the same type of behaviour; a part of the unceasing seeking after a better adjustment to environment which we hold to be the moral purpose of life.

Recent scientific investigation would tend to confirm the belief that "the original stimulus for sex is not as popularly supposed an individual of the opposite sex. It

is rather an internal excitant." Furthermore among "human beings although the relations of the sexes are greatly complicated by recognition, imagination and other cortical processes, the original sexual stimulus is also unquestionably internal in its location. Stimulation from the physiological activities of the internal sex organs rather than those of the sight of a member of the opposite sex is the drive to action." [1] This does not exclude the fact that "falling in love" is immediately due to physical contact. The added stimulus of touch and sight of the love object are an essential part of the emotional crisis that completes the cycle of love and awakens the desire to identify oneself with another. Thus love which in the beginning was a self-seeking sexual need is transformed into a striving after a higher unity in which the self while retaining its identity is merged with another, becomes other-regarding. Here we have the beginning of social recognition that modifies individual behaviour and shapes it in accordance with the new needs that have arisen. The satisfaction of the sex drive is the point of departure for further social progress. It is here that the individual first comes to realise that the world is not necessarily a hostile world, but a means to harmony. Hostility and conflict are never wholly absent but in love come to take second place, and are for the time being forgotten in the higher harmony that love engenders.

VII

Love is the base of the pyramid of morality. The effort to make of it the apex, as is done in the Christian world view, and detach it completely from its sexual origins is coming to be recognised as a gross misconception. The orthodox religious world view disregards alto-

[1] Cf. F. H. Allport, *Social Psychology*, pp. 69-70.

gether the primary sexual needs of mankind. As long as it was believed that man was a special creation, different in kind as well as in degree from all other animals, a superior being, patterned in the image of an abstract spiritual God, so long were the longings of the flesh, natural and normal in themselves, branded as sin. In the same way the world of mind was placed above that of matter so-called, and between them yawned the bottomless pit of damnation. By distorting the sexual drive it was possible to arrive at an outwardly satisfactory status in which sex was separated from love and in its place a sterilised form of love—the love of God—was offered as a means of salvation. But once man is recognised as a part of the evolutionary series, and takes his place in the animal kingdom, it was inevitable that the problems of sex should be dealt with in a scientific spirit, and their close connection with the love motive made clear.

It is not the place here to outline the various new psychological and biological interpretations of sexuality that are being offered. In the vanguard the psychoanalysts and the new school of sex biology are making a place for sex in our mental organisation. They are showing the value of sex activity as a pathway to a broader social understanding. As a first result of the new scientific approach to the study of sexual problems, we are coming to perceive something of the inner nature of those complex tender emotions which we sum up under the term "love."

It is in the development of the psychical activity we call "love" that man has evolved farthest along the path of life. It is primarily because sexuality has invaded the mind of man, and that sex plays a more constant and important rôle in human affairs than it does in the animal kingdom, that progressive social evolution is possible.

We are coming to realise that sexuality, far from being a survival of our animal ancestry, a last remnant of bestiality in man's otherwise divinely patterned personality, is as a matter of fact the sign of his cultural ascendancy. Sex diffuses its radiance over man's whole behaviour, and emerges as "love." The love motive here takes first place as the impulse to evolutionary progress along lines of perfection. Whatever progress there may be in the world is towards the fuller realisation of the love ideal, that is, of a higher unity in which mind and matter are joined to form an indivisible whole.

VIII

The difficulties that beset the path of liberating sexuality from its present bondage are not to be denied. The fact that the maturing of sex takes place before mental and physical maturity requires us to revise our ideas about the part that it plays in life. It is the drive of all creative energy, that fashions the individual pattern of life.

"The proper way then to build the sex instinct into the mental system," writes a distinguished biologist, "is not to have its stimulation cause a merely physiological and uninhibited desire for its gratification, nor to bring about a forcible repression and an attempt to break connection between it and the other parts of the mind." [1] What we must strive to do is to make possible a free interchange between sexual and mental activity, open new channels of communication between the exuberant, irresistible creative energy of sex and mind. Mr. Huxley further suggests that "this change in mind consists in the tendency towards uniting the different parts of the psyche, both those portions given by heredity and the modification due to experience, into a single organic

[1] Cf. Julian Huxley, *Essays of a Biologist*, p. 164.

whole, and in making this whole more dominant over the other aspects of the organism; the consequent tendency as regards the relationship of sex to the organism is towards taking it out of its single groove, its water-tight compartment, and bringing it into more complete and permanent union with the rest of the mind." [1] Some such scientifically grounded solution is the only one possible. There is no longer any room here for the older moralising about the sex question.

The problem of sex remains one of the most pressing problems of our times, but our method of approach to it is being radically revised. The old moral equation of right and wrong in regard to sex is no longer valid. In the intimate relations between individuals which the sex drive calls into being, the question of adjustment of inner needs to outer circumstances requires a different answer than that of good or bad in the old moral sense of these terms. We still find everywhere social barriers set up which look to repression rather than to organisation and utilisation of sexual impulses. The love motive which is striving to attain spiritual unity through sexuality is only exceptionally, and more often than not outside of the bounds of conventional morality, allowed free scope for development. The normal love motive, owing to a variety of causes both personal and social becomes distorted, and the result is nothing short of bondage. Love in order to free itself must, under the existing religious moral code, become something that is stamped as immoral.

IX

Throughout the 19th century the question of "free love" aroused much literary interest. Poets like Shelley and Goethe gave the matter their attention, and in their

[1] *Idem*, p. 161.

own love relationships sought to put their ideas into practice.

"Love withers under restraint," writes Shelley, "its very essence is liberty; it is compatible neither with obedience, jealousy nor fear; it is there most pure, perfect and unlimited where its votaries live in confidence, equality and unreserve. How long then ought the sexual connection to last? What law ought to specify the extent of the grievances which should limit its duration? A husband and a wife ought to continue so long united as they love each other; any law which should bind them to cohabitation for one moment after the decay of their affection would be a most intolerable tyranny." [1]

At about the same time Goethe in his *Elective Affinities* records that every marriage should be limited to five years. "This number," he said, "is a beautiful sacred odd number, and such a period of time would be sufficient for the married pair to learn to know one another, for them to bring a few children into the world, to separate and what would be most beautiful of all, to come together again." [2]

George Sand for her part devoted much of her literary skill to depicting the tragedies of marriage. The growing socialist movement took up the defence of "free love," and we find Fourier, in the organisation of his scheme of a communistic society, giving to such unions an honoured place. Philosophers gravely examined the question. Schopenhauer undertook an analysis of the love motive and drew up a systematic plan in which he proposed to replace monogamous marriage by what he called a "tetragony" or legalised "ménage à trois," so that "a man, at the time when his income is usually the small-

[1] Cf. E. Dowden, *Shelley's Poetical Works*, p. 42.

[2] Cf. I. Bloch, *Sexual Life of our Time in its Relation to Modern Civilization*, p. 241, as quoted in his interesting chapter on "Free Love."

est would have to provide only for half a wife, and for few children, and those young. Later when he is richer he would have to provide for one or two wives and for numerous children." [1]

The numerous other attempts made to find a way out, and to free love from the bounds of coercive marriage without leading to promiscuity, attracted increasing attention. The emancipation of women, the industrial revolution of the latter 19th century, and above all the progress made in the realm of biology and psychology due directly to evolutionary teachings, are to-day bringing about a complete change in our approach to sexual questions.

The problems of sex from being matters for academic speculation or arbitrary moralising, to be discussed in private behind closed doors, were now brought out into the open. The widespread interest in sex matters in all of its aspects as we find it to-day, whether masquerading under the guise of art and literature, or openly presenting itself in scientific dress, is not, as is so often declared, to be taken as a sign of degeneration and social decay. On the contrary we may look upon it as an earnest though often blind striving after a fuller understanding of the underlying factors of the love motive.

X

Here we see the new morality taking shape; a morality that is compatible with a scientific world view. Science is discovering that the chief part in human behaviour is not so much a matter of individual responsibility in the older sense of the term as due to physiological factors, the little known functions of the ductless glands, the "endocrine

[1] From an unpublished Ms. in the Royal Library in Berlin reproduced by I. Bloch, *op. cit.*, pp. 246-247.

make-up" as it is currently called. Whether such be the case or not we must at all events recognise in sex a normal function of the life process.

The old outworn sexual morality, the religious teachings that thunder about "the lusts of the flesh" are ready to be carted to the rubbish heap. In point of fact the whole edifice of the religious interpretation of the love motive, long a mere façade, has crashed to earth. There is now room to rebuild and offer a new interpretation of the love motive, that will take into account the fact that love is born of a union of sex and mind, the suffusion of sexuality through all of the parts of mind. It is through love that man towers above the rest of the organic world. Love gives to life a spiritual character which otherwise it would not possess. Love is in itself just this spirituality that man has added to life in the process of evolution. Seen in this light the love motive is the latest and at the same time the most progressive factor in the evolutionary series. It is here that we must look for the guiding impulse to further evolutionary development, foreshadowing the evolution of a higher type of human being.

To love means the ability to make a more efficient use of those forces of nature that in the animal world expend themselves in mere reproduction. By the suffusion of sex through all of mind, higher spiritual values beyond mere blind reproduction of the species are discovered. Sexuality, when joined with mind, emerges as love, that transmutes a physical act into a psychical fact, a striving after the highest good, that gives to life its spiritual significance. Here all that is nobly achieved by mankind has its ultimate origin.

But love is not to be conceived as some abstract quality, pure spirit, a gift of God, belonging to a world

beyond. It is a personal achievement, man-made for men, racy of the flesh in which it grows. In love personality awakens and becomes conscious of itself. The whole heredity of man, his bodily and mental predispositions, both actual and potential, have here free scope for development. Here the striving for adjustment to environment culminates, and love becomes the foundation of all morality.

According to the scientific world view the love motive contains in itself those spiritual qualities that make life worth living. It would take into account the fact that sexuality has a significance of its own for the individual apart from and above its purely reproductive features. It would acknowledge that sex instincts are an integral part of our highest spiritual activities. The problem of our times is to find a way to organise sexuality so that it may promote rather than hinder the further development of these activities. In order to do so we must be ready to admit that many of our laws and customs are obsolete. We must be ready to accept the view that the love motive is progressive, and is in process of active evolution.

XI

The new love motive implies a new type of mental organisation. Here we may study the process of the evolution of mind in action. As we view it, it is through the love motive that the further evolution of mankind is taking place. This evolution is not simultaneously carried forward by the race or by a more limited group, a nation or people, but is an individual affair. Some individuals of a species are more evolved than others and if this evolution is in the direction of efficiency and better adjustment, it has a tendency to survive.

What we see taking place in love is the culmination of a long and arduous effort to co-ordinate sex and mind. It is in the nature of a rearrangement of the mental hierarchy that will give to sex life, so long disinherited, a place of its own in our mental make-up. In the maturing of the love motive which is the characteristic feature of the advent of a scientific world view, a place is being found for sex. Sexuality is no longer to be an independent instinct to be given unbridled licence by some, or to be violently repressed by others, but rather we may expect in time to see it take its place alongside of our other emotive processes in so far as it is linked up with mind. It is not to be denied that for the vast majority the proper utilisation of the sex drive still remains an unsolved problem. But we are coming to understand that sex is a fundamental element in our higher nature and not a survival of our inherent animality.

The individual is making ready to be personally responsible for his sex life. He can only assume this responsibility when it is made plain that sex is a normal function, a part of the life process, and in some aspects its most valuable part. Until this is achieved many generations may come and go, but this does not prevent us from taking note that a beginning in this direction has been made.

The new scientific world view is changing our attitude towards the questions of sex. Constructive thinking is here the order of the day. And though a radical change in our laws and institutions will be required before any practical moral effect may be noted, we can already discover that the old religious world view is no longer tenable, and that the love motive demands moral sanctions on scientific, and not on religious grounds.

A higher morality is thus conceivable than has as yet

been realised. In so far as we recognise that love conscious of its sexual origins is a spiritual force and that it requires freedom for further development, will we be promoting the process of evolution. We no longer will have a "love that surpasses all understanding," but a love that illumines understanding.

CHAPTER III

The War Motive

I

WAR we are told is an institution so deeply rooted in human nature, so essential a part of the evolutionary process, a biological necessity, that we can never reasonably expect to be rid of it. Warlike behaviour is under certain circumstances so imperative that it would seem impossible to conceive of a world free from warfare. Yet the mere fact that such a conception exists, that we are actively seeking for a method to prevent war, would tend to indicate that the idea of the abolition of warfare is plausible, and if not a matter of practical politics to-day may reasonably be expected to be realised at some not very distant date when the war motive no longer serves as it has in the past a social purpose. In our own day we are coming to see that war in spite of its apparently stimulating social effects is anti-social, and what is even more important, that it belongs to an age and a world view that is gradually disappearing.

War which seeks a solution for conflict and rivalry when all other methods fail, has for its aim a better ultimate adjustment to, or control over, environment, and viewed in this light fulfils a moral as well as a social purpose. But the question we must now ask ourselves is, what, if any, useful function does war have in a civilisation that accepts a scientific world view? In the light of science is war the one best way to adjustment to and

control over environment? What rôle does the war motive which belongs exclusively to a religious interpretation of the universe—the first form of warfare was connected with human sacrifice, a religious rite—fill in a civilisation that would take science for its guide?

As long as Nature was believed to be some blind, unconscious force, as long as the biological impulse was concerned with the evolution of more perfect structural forms, war was an important element in the technique of progress. When once this task was completed, and the evolutionary process concerned itself more especially with mind, mankind discovered that over and above the so-called material values, a realm of spiritual values exists. Henceforth mind assumes the rôle of guide and experience is looked to as the teacher. The war motive begins to lose social significance, and war, no longer a means of social adjustment, becomes a survival, and as such immoral.

II

The gradual evolution of mind and the development of self-consciousness is reflected in the social institutions established. The history of human evolution shows a displacing of war from first place in the interests and preoccupations of men, as the higher rungs of the cultural ladder are reached. In so far as the war motive is relegated to second place, in so far is a freer cultural development made possible.

The history of civilisation is the story of the continuous efforts made by man to establish some system of social relations which, while finding a suitable outlet for the natural rivalry and conflict inherent in all such relations, will see to it that they do not issue in open warfare. Whereas in the early history of the race war was chronic

and continuous, so that it was held to be the natural condition, and peace the exception, in subsequent epochs as higher cultural levels are reached, we find longer intervals of peace, as the irrationality of war dawns on human consciousness.

Man in becoming self-conscious, comes to realise the futility, the wastefulness of war, but beyond this he has not hitherto gone. No substitute for the war motive has been found, no successful method to abolish warfare has been devised, though in our times it is one of the great problems that men are endeavouring to solve. If war may have been a useful part of the technique of a pre-scientific age, and the war motive indispensable to a religious world view, it is being discovered that war has no proper place in a civilisation that claims to accept scientific principles. At this point it might be objected by some that Christianity as well as other religions have preached a gospel of peace on earth and good will towards men. But its practice has been belligerent, and in so far as Christianity assumed world proportions, a Christian was "a soldier in the army of Christ."

It is not to religion that we should look for a solution of our problem. As long as religion remains an active force in the world the war motive will survive. The soldier readily seeks for support in battle by invoking the aid of his God. Every Christian belligerent State in the World War confidently proclaimed the support of the same Deity, and when the victory was won *Te Deums* were chanted in the churches throughout the conquering lands. Many even went so far as to ascribe the victory to the direct and personal help of God. Nor did the vanquished relinquish the hope that in spite of defeat God was still somehow on their side.

Nor does the way out seem to lie through the dis-

armament of nations, as is being attempted under the auspices of the League of Nations by calling an international conference for this purpose. The division of the peoples of the earth into sovereign, national States implies a fundamental right to go to war, that no treaty agreements to disarm or international court of arbitration can abolish. As long as current ideas about the irresponsibility of the sovereign State survive, and the belief exists that the State can do no wrong while safeguarding its interests, the war motive will remain paramount.

The right to make war is the distinguishing feature of the State. The war motive is a fundamental principle of politics. Upon it the modern political state system has been built up. From Machiavelli to Mahan, from Borgia to Bismarck the right of belligerency as the cornerstone of the state edifice was unquestioned. The power of the State, its sovereignty and independence, its welfare and national honour were inextricably woven about the war motive. To limit or abandon the right to make war would undermine the entire political state system. If the inherent right of belligerency is taken away from the State, the *raison d'être* of the present political organisation of the peoples of the earth into separate sovereign States vanishes.

To-day there are many signs that the older ideas of sovereignty are being abandoned. We have pointed out elsewhere [1] in some detail the salient features of the decay of the political state system. It is coming to be realised that the political organisation of the peoples of the earth into sovereign belligerent, national States is neither permanent nor final. The fact that humanity is to-day divided into some sixty sovereign States which claim for themselves the sole right to determine whether or not

[1] Cf. my *Passing of Politics* and *Thirty Years of Modern History.*

they shall go to war does not mean that no other social organisation is possible. Though the framework of civilisation as it still exists is that of sovereign, belligerent States this should not blind us to the fact that it is possible to conceive of a social organisation in which ideas of political sovereignty and belligerency will play no part.

As Admiral Mahan has characteristically pointed out, "The province of force in human affairs is to give moral ideas time to take root." There are many signs that the new morality which looks to science as its guide will require a new formula of statecraft. Here the war motive finds no room. Though the abolition of war may not be feasible in our day, the fact that sovereign States have been willing to send delegates to a conference to discuss disarmament as a step leading to the prevention of war, is a sign that the State is making ready to abdicate its sovereignty.

III

To get at the heart of the matter we must go deeper. We must endeavour to understand the psychological aspects of war as an institution. We must seek to analyse the war motive. What do we find?

Human institutions are human products. They are devised in order to serve some useful purpose, though in subsequent ages this purpose is lost sight of. We have often been told that war is a primary social institution, that the warlike behaviour of man is inherent in human nature and that man is naturally belligerent and aggressive. But a study of social psychology shows us that this is far from the truth. The behaviour of man is moulded by the institutions which have gradually been built up in the course of cultural development. Such institutions remain more or less intact long after the purpose which

they may originally have served has disappeared. In this way an institution may block the path of progress as long as few realise that its day of usefulness has passed.

Man in the course of his history has been obliged to discard many institutions which were at one time valuable cultural assets. In our own times war is coming to be such an institution. Most of us are willing to recognise that war plays no useful part in an industrial civilisation such as our own. The soldier is no longer the dashing figure he once was. The captains of industry outrank the captains of armies in public esteem, and in the privacy of our own thoughts few are to be found who do not recognise the wastefulness, the folly of war as a method of social adjustment.

As a matter of fact warfare has been greatly modified. Some of its characteristic features are passing over into other institutions. The rivalry and conflict which in the past even among civilised peoples were expended in feats of arms, in war, are being absorbd by big business and in sports. In business, money getting is no longer the exclusive motive. The pursuit of industrial power, the desire to win in the contest against some other business firm, has to be taken into account. Industrial institutions are taking over much of that surplus energy which in the past could only find issue in warlike enterprise. In the same way what in the past went by the name of military prowess is finding an outlet in a peaceful way in sports.

IV

Recent psychological inquiry throws much light on the so-called combative instincts of man. It is being discovered that contrary to current opinion fighting throughout the animal kingdom is of a defensive and protective

character. While man will fight to defend himself he does not readily attack. It is only when brought to bay that his fighting qualities are aroused. Experience shows that the best way to forestall an impending attack is to attack a potential opponent first. This foresight has been allowed to obscure the real character of the fighting impulse which when analysed shows itself to be exclusively of a defensive nature.

When the conduct of others thwarts our desires and aims, conflict is inevitable and has for its immediate object the overriding of opposition and the possible triumph of the original aim. But social behaviour implies a countless series of conflicts which are never permitted to come to the surface. They take place within the individual himself. Here opposing motives fight it out, and conscience acts as the arbiter in seeking a way to overcome the difficulties that have arisen without recourse to overt acts. What in a more primitive civilisation might have been an open conflict between individuals is as we advance to a higher civilisation boiled down to a mental conflict within the individual. At this higher level of culture, conscience reveals to the individual his social duty and makes possible social conduct. It moulds his code of behaviour in that it points out not only his duties but his responsibilities.

All social behaviour assumes a moral tone in so far as adjustment is possible without open conflict. As we ascend the cultural scale we see a steadily decreasing ratio of open conflict, and a tendency to reach an amicable settlement of differences without an appeal to arms. The framework of the social order is continuously being modified in order to afford a more complete and adequate means of solving conflicts without entailing destructive consequences. The history of civilisation records a con-

tinuous improvement of method of socialising conflicting aims by peaceful means rather than in open warfare. Whereas among primitive peoples war is the first and only solution, among the more advanced, warfare is only a last resort.

The most effective method hitherto discovered for the socialisation of rivalry and conflict was the national state system. The famous *pax Romana* was a symbol rather than a reality. In Modern Times the bonds of national allegiance and the authority of national governments have, except in extreme cases, acted as powerful deterrents from unsocial conduct. The control exercised by governments over their citizens has been developed to such an extent that crime is coming to be treated as a pathological condition. Obedience to the law of the land on the part of the individual has become not merely a moral duty but a social obligation. When this stage is reached the individual co-operates voluntarily in promoting public welfare rather than through fear of punishment.

Though the individual has been able to arrive at a relatively efficient method of directing his conflicts and rivalries into peaceful channels, the State in its relations with other States has not found a way to settle its more serious differences without an appeal to arms. Nor is there, as we have shown, any way to do so discoverable as long as the present concept of the sovereign, belligerent political State survives. While the modern individual is in a fair way of becoming socialised, so that his unsocial conduct is being dealt with as an abnormality, the conduct of States in their relations with each other remains unsocialised. Thus the war motive survives as a guiding principle in the conduct of government in spite of the cultural progress that the individual as such has to record.

War is still looked upon by statesmen as a cure-all in extreme cases. But notwithstanding the efforts made to bolster up national patriotism as a feeder for that convenient war motive, "national honour," the grim business of war is fast losing its former glamour. War is no longer a national sport, much less a national pastime as it was to the imperialists of the past generation.

V

If science teaches us anything it is that national rivalry and the lust for violence are social survivals, and not inherent in our mental make-up. A more rigorous study of social psychology will show that no place can be found for war as an institution in an industrial civilisation. An institution is by definition a social structure developed within a community for the purpose of fulfilling some human need. We would not deny that in the past war was an institutional form of great cultural significance. If on the one hand it entailed violence, deceit, atrocities and the wilful destruction of the lives and property of the enemy, on the other it aroused the nobler sentiments of heroism, self-sacrifice and abnegation. But in spite of these compensations war achieves its purpose by means recognised normally as immoral. Notwithstanding all of the glamour that surrounds war, and the patriotism it enkindles, we cannot get away from the fact that the war method is in itself destructive of those cultural achievements which the race has so arduously striven for.

There may be some truth in the view that the atrocities committed in war are more natural to man than his civilised behaviour; that violence is the instinctive method of settling every quarrel, a tendency that is only lost when society puts a ban on such methods. But we are coming to understand that a State is not strictly speaking a psycho-

logical entity that has, as some would claim, a group mind. The State is made up of individuals. The interests and ideals which we ascribe to the State belong to the individual. "National consciousness is the consciousness which the individual has of his nation as a whole." It is his conception of universality, of his belonging to the group. He identifies himself with the State, is exalted by its successes or depressed by its losses.

The modern, national state system is the broadest interpretation of the individual feeling of universality hitherto attained. Compared with the narrow limits of the family, the tribe, the clan, or even feudal allegiance it marks a great advance. Every step forward in cultural life is accompanied by a broadening of the feeling of universality of the individual, in order that he may live unmolested in a vaster, freer world. Just as national solidarity as offered by the modern state system represents a great cultural gain over the more limited feudal world, so the idea of humanity that is taking shape to-day transcends nationality.

VI

No price can be too high if some new social organisation can be devised that will rid humanity of war. This will not be accomplished by perfecting a plan by which war will be staved off from year to year, or even from generation to generation, but only when the whole conception of war and peace as it still survives to-day loses all significance.

It is not difficult to build up a case and bring apparently weighty evidence to bear in order to show that war is a permanent human institution, that it has always existed in the past, and therefore will always exist in the future. In our own times, standing as we do on the

threshold of a new age, when the older war motives fall flat, it is convenient to account for the necessity of war as the only way to get rid of pent-up discontents. Man, admittedly, no longer goes to war for personal motives of lust or loot. He fights, we are told, for a national cause, an ideal, for national honour. The men who fought so valiantly in the World War did so for aims which they only vaguely understood, and which certainly were of no personal importance to the great majority of them. The ideas and ideals that made the war inevitable belonged to a generation for the most part too old to fight. World dominion and world power, *Weltmacht oder Niedergang,* were all but incomprehensible to the men who filled the trenches in 1914.

It is significant in this connection to record that all of the belligerent governments vehemently denied that they had precipitated the conflict. They published blue books and white papers to prove their contentions in order to justify themselves, not only in the eyes of their own peoples, but of the world. Since the World War, war is being widely discredited. The patriot who extolled war as the best training in civic virtue is fast disappearing. Though a certain glamour still attaches to the idea of war, we are coming to realise that the actual motives of war are, when analysed, psychologically trivial.

It has been suggested by way of explanation of the survival of warfare among otherwise rational men that the State has monopolised all of the wickedness that it has suppressed in its citizens, and that "common international interests are not strong enough to hold national passions in check." [1] But this explanation is scarcely adequate to account for the war motive in a civilisation that

[1] Cf. Dr. John T. McCurdy's interesting pamphlet, *The Psychology of War.*

is coming to accept a scientific world view. It is not because war is good or bad, inhuman or unjust, not because it inflicts needless suffering and destruction that it should not be tolerated, but rather because it no longer has a proper place in a world that would take science as its guide.

War in our times is a blundering, uncertain, barbarous method of attaining a given end. The methods of science have been applied to warfare with the result that war has been shorn of many of its peculiar characteristics that marked it off from all other activities. War in the past was a spectacle. It took place in a definite, limited place. A battle was a day-time affair that usually was fought in somebody's corn fields. Until science took a hand in war methods, gaudy uniforms, plumes and feathers, the fife and drum were the order of the day. Even in the wars of the latter 19th century some of these elements survived.

But once the methods of science were rigorously applied to warfare, war from being the occupation of the combatant in a battle that stopped at sun-down, has come to embrace all of the people, all of the twenty-four hours of the day. The distinction between combatants and non-combatants has perforce been abolished. There are no longer any spectators in war-time. Nobody is left to applaud the victorious general. There is no longer any dividing line between civilians and soldiers. It is admitted that in the next war no distinctions will be made "between the soldier who wields the weapon and the woman who makes it."

The new scientific technique of industry which has made possible new weapons and new means of destruction, has brought the entire population of a nation at war, old men, women and children within the radius of action. Under

such circumstances warfare among industrialised peoples will assume destructive proportions never dreamed possible in the past. "Let me at once say," writes Major General Sir George Aston, "that after careful investigation and consultation with experts, I believe that any great industrial nation, acting upon the principles of Clausewitz and the German War Book would be able within a few hours of the order being given, to devastate whole cities with poison gas and explosives in any foreign country within petrol radius of aircraft. . . . The whole civilian population is exposed to immediate and direct attack by nations which place no limit upon violence in conducting war." [1] But the war motive by definition implies unlimited violence. Check it in one direction and it will extend itself in another. This explains the futility of disarmament programmes and other such palliative measures, as long as a government assumes the full responsibility for and directs that its military instructors shall see to it that, "The inherent desire to fight and kill must be carefully watched for and encouraged." [2] "To introduce into the philosophy of war itself," Clausewitz in his famous treatise *On War* declares, "a principle of moderation would be an absurdity. . . . *War is an act of violence which in its application knows no bounds.*"

VII

Some years before the World War Mr. Trotter in an article which he later elaborated into war propaganda entitled *Instincts of the Herd in Peace and War,* sets forth: "Among the first class Powers to-day the mentally stable are still the directing class and their characteristic tone is discernible in national attitudes towards experi-

[1] See *Nineteenth Century and After,* March, 1920.
[2] Moss and Lang, *Manual of Military Training,* in use for the training of officers of the United States Army, Vol. I.

ence, in national ideals and religion and in national morality. It is this possession of the power of directing national opinion by a class which is in essence relatively insensitive towards new combinations of experience; this persistence of a mental type which may have been adequate in the simpler past, in a world where environments are daily becoming complex—it is this survival of the waggoner on the foot-plate of the express engine which has made the modern history of nations a series of such breathless adventures and hairbreadth escapes. To those who are able to view national affairs from an objective standpoint it is obvious that each of these escapes might very easily have been a disaster and that sooner or later one of them must be." [1]

Though a pre-scientific age may have been obliged to be satisfied with governments that led mankind through a series of breathless adventures among which war occupied the place of honour, the time is not far distant when the energies so diverted in the past will be canalised in more useful directions. Science is showing that what we term peace and war are the result of states of mind,[2] not unlike the opposition set up between heaven and hell, body and soul, mind and matter. Scientific study is revealing that such dualism is false. Science has disposed of the idea of hell without difficulty. Heaven itself is fast vanishing. In the same way the older conceptions of the duality of mind and matter, of body and soul, are being completely transformed, and no longer loom so large on the horizon of knowledge. It is not impossible that this will be the fate of the older ideas of peace and war.

It is not to be expected that all wars will suddenly cease

[1] *Sociological Review* (1908), reprinted in *Instincts of the Herd in Peace and War*, pp. 54-55.

[2] "What we call peace is apparently a period during which forces both psychic and material are dammed up until their accumulated pressure overpowers the judgment of mankind." McCurdy, *op. cit.*

and that mankind will achieve overnight a state of perpetual peace. In our view peace as commonly understood as an absence of all struggle and rivalry would be as disastrous to cultural progress as is war. Peace, which is still regarded as the high ideal of mankind, is a religious construction. It is pictured as an ideal state of human blessedness. If war may be likened to hell, peace corresponds to heaven. In disposing of the one, science would show the way to dispose of the other.

There are many conservative-minded persons still in our midst, occupying places of honour and authority in the community, who, while looking backward and thinking in terms of heaven and hell, peace and war, would at the same time make fullest use of the inventions and mechanisms that applied science has made possible. They would graft science upon the religious interpretation of the universe, and retain the war motive and other conceptions belonging to a pre-scientific age. But such an anomaly cannot indefinitely endure. As long as it does the present malaise and moral mal-adjustment will continue.

Until war is once for all displaced from its position of honour, until it is realised that struggle and rivalry, with their tonic psychological effects, need not issue in violence, no solution is possible. The most hopeful sign is that we are coming to understand that warfare belongs to a world order that is passing.

The human spirit is entering a new world. It would make as far as possible a clean sweep of all the older notions attaching to a biblical cosmology. We are beginning to be able to see beyond the mysterious shadow world of religion to a vaster universe. The truths of the religious world view of yesterday are to-day superstitions. Is it too much to expect that war will, though it may take a much longer period, disappear as a valid social motive?

CHAPTER IV

The Economic Motive

I

THE direction of evolutionary progress may most readily be traced in the improvement in the methods adopted to satisfy the material needs of man. It is with the satisfaction of these needs that the economic motive is concerned.

While on the surface it would appear as though economic questions are primarily individual, a moment's reflection will show that all economic activity implies a transaction of some kind, with somebody. The economic motive is the link that binds individuals together, not under exceptional circumstances as does the love motive, nor with destructive intent as does the war motive, but in everyday intercourse which moulds the pattern of habitual social behaviour. In order to live man must earn his living, and in seeking to do so he has in the course of history built up a complex mechanism, based primarily on ideas of barter and exchange, which form the ground of all cultural development.

For most people the urgent need of earning a living obscures all broader ideas of how to live. Economic motives are so intimately bound up with our ways of life that we do not see the woods for the trees. We are only just beginning to take into account that these motives are fundamental factors of morality.

It is the peculiar contribution of the new scientific spirit that it has brought to the fore the importance of economic problems. It is because the modern world has been transformed by the application of scientific methods in the economic field that a change in the direction of civilisation is taking place. Or to put it in another way, it is because a new economy has arisen, because we have discovered more efficient means to satisfy our needs that a new orientation of civilisation, a new world view, is possible.

Never before in the history of the world has an attempt been made to give to economic motives a place of first importance as a cultural asset. The religious world view deliberately condemned all economic motives as sordid and sinful. During the past four centuries, when religious influence has been gradually declining, the peoples of the Western world, while increasing their economic power, were chiefly concerned with political rights and liberties, with ideas of political freedom and equality. It is only within the memory of men still living that the economic motive has been freed from its subservience to other motives, and even to-day it is not recognised by the majority as a worthy end in itself. The old traditional religious conception still clings tenaciously to economic interests and would exclude all such questions as unworthy of spiritual consideration. But if we would develop a new world view, consonant with the scientific spirit which is spreading to-day, all such notions must be abandoned. If man is not simply to exist, the blind puppet of circumstance, but is to be able to do something constructive with his life, economic freedom, which the application of the new scientific technique in industry is making possible, must be assured to all.

II

In the civilisation of the pre-scientific age when man was concerned chiefly with the salvation of his soul and his relations with God, when he was preparing himself for a future life, it was only natural that economic motives had to be relegated to second place, and could play no part in the development of his moral character. But such is no longer the case. Religion, which dealt with the individual in his loneliness, is being discarded for a scientific interpretation of the universe, which takes into account the individual as a unit of the social order. Science would give to this individual a social status in the world of events here and now, and this status is directly dependent upon his economic value. If the individual is to keep pace with the transformation of the material universe that is being brought about by science, if he is to share in the benefits conferred by the application of the methods of science to the problems of living, some way must be found to give to economic motives the dignity and high consideration which has hitherto been denied them. The immediate task before us is to establish the new scientific economy on a firm moral foundation.

We must examine once again in the light of science our economic motives. Science is no longer a purposeless patterning of events according to some orderly sequence, of no especial concern to us as individuals. It is not merely the classification and arrangement of known data so that they may be readily referred to when needed. Many still do not realise how during the past half-century science has come to pervade our spiritual universe. We are just awakening to the fact that science is not merely something objective and outside of ourselves, with which we have no direct connection, that it is no longer the private province of a small coterie of technical experts and scientists,

but has come to make up the fabric of the life of each and every one of us, colour our outlook, temper our opinion, mould our point of view.

It is in the new economy that science has most completely revolutionised the older ways of thinking. No one doubts the validity of the scientific method as applied to economic problems. Economic motives are one and all thoroughly permeated with the new scientific spirit. Science here is nothing more than applied reason. It is a method of procedure which has for its immediate purpose to economise human effort.

But in addition a science has the further object in view of making possible a better adjustment to, and control over, environment. Here we come upon the moral significance of science, and it is in the economic field that we have progressed the farthest in this direction. The world of science as we know it to-day is primarily an economic world. No matter what the remote future may have in store for the race, for the present and the immediate future it is the economic destiny of man that is the problem of the age. It is through economic motives that the pathway to a new and higher freedom lies. Here we must look for the chief constituents of the new morality.

III

In seeking to discover the moral aspects of economic motives we must abandon the notion that these refer only to such basic needs as food and shelter. Though traceable to such primary needs, economic motives are concerned more especially with the moulding of environment so that man can make himself independent of the caprice of nature. According to a scientific world view the development of the personality of the individual is

directly related to his economic security. Contact with the external world is not merely concerned with the satisfaction of our desires, but rather with offering us a plan of life through which we may attain freedom from toil, to have the leisure to enjoy life. What the political theorists of the 18th century called the "pursuit of happiness," the scientific economy of the 20th century would show the way to realise in the form of economic independence. This is the great achievement of the technique of industrialism.

If we are to be able to enjoy the leisure which industrialism makes possible a complete revision of economic motives is required. We must put behind us all metaphysical abstractions, and admit at the outset the fundamental dignity and importance of economic pursuits. Man is capable of continuously better adaptation to environment which is in the first place attained in the sphere of economics. The immediate problem that is confronting us is to turn to best account the facilities offered by science, to give fullest scope for the rapid development of the new economy. No one denies that the creative genius of the race is concentrated on this problem. But many still harbour prejudices against economic motives as somehow sordid and unworthy of the higher aims of life.

Every new discovery of science contributes to establishing more clearly the need, not merely of rejecting the older pre-scientific interpretation of the universe, but what is even more important, of finding new substitutes for the older moral motives. If we examine the new motives that are beginning to take shape we will find that for the time being at least they are coloured by the predominant part that economic factors play in modern life. They are comprehensible only if interpreted in the light of their economic origin.

IV

According to the new morality it is not so much a question as to whether acts are right or wrong, good or bad, pleasant or unpleasant, but rather whether they meet a pragmatic, or as we might say, a prudential test. "Does it work?" "does it pay?" are the questions that we seem for the time being called upon to answer in determining our conduct.

We are the first to agree that these tests are not valid even from the standpoint of science, and that no real progress in moral emancipation is possible along such lines. But we cannot overlook the fact that they exist to-day. The reason for this is that no distinction has yet been drawn between the economic motives of the new age and the century-old association of economic phraseology with some sort of payment for services. Pragmatism is the inevitable philosophy of an age that is still unable to see in economic enterprise, which is the dominant motive force that is moulding the temper of the times, anything but a field for personal exploitation in a competitive sense. It is the result of seeking to apply the methods of science to what in reality are obsolescent motives. We have inherited from 19th-century economics the belief that the ruin of our neighbour contributes to our own prosperity. The scientific economy of the 20th century is proving that this conception is false. The idea of prosperity for all is the fundamental economic motive of the new age, and we are discovering that it can best be achieved not by means of ruinous competition but through co-operation.

The new economic motive is thus not concerned with buyers and sellers or the mentality attaching to these, but rather with ideas of efficiency and organisation that will break down the mental barriers that still survive. Here

again we have to deal with inherited tendencies. The overlapping of generations which makes for social stability and continuity, performs at the same time the sorry service of perpetuating outworn ideas and traditions. It is one of the chief contributions of science that it teaches us that while its methods are infallible, its results are only provisional. This does not mean that a scientific world view would have us disregard altogether our social heritage. What is required is that we select out of the great mass of conventions, customs and traditions of the race, those elements useful to the new outlook on life that science has to offer. It would have us take into account the fact that institutions such as the Church and the State, which may in the past have served to render permanent certain efficacious types of social behaviour, must be modified and replaced by new institutions that fit in better with the needs of the civilisation in the making. Government, law, education, justice and freedom may not be so very different from what they have been in the past, but they must be refashioned in order to serve new ends.

V

It is the first purpose of government to insure security both for the individual and for the group. But the problem of social security to-day differs greatly from that of a century ago, due to the fact that science has transformed the physical universe, and is daily introducing new methods of control and adjustment which render superfluous many of the methods in vogue. To meet this constant change that is taking place, a change in our attitude towards existing institutions is necessary. The new economy is affording the possibility of a wider and more varied social life than was possible hitherto. The prospect of a

new freedom is held out to us. This freedom not only makes existing institutions seem inadequate, but entails a new sense of social responsibility, a greater individual intelligence in living.

No means has yet been found to awaken men to the need of a keener insight into social motives, and to make them realise that the world to-day requires a greater effort of mind in order to adjust to the new environment. Religion, as we have seen, can offer no solution, and must be left out of account. Though in the past the Church was useful as a means of insuring social security, to-day it tends to make for obscurantism, and at best is the solace of sick souls.

The State for its part, as the law-making agency, is still active, blindly seeking to adapt itself to the needs of the times. Governments for the most part have no adequate organs of contact with the new world that is growing up about them. Politicians and political parties are exhausting themselves in seeking to retain the direction of social life by unwarranted activity in pouring new laws into the old national state bottles.

It is only when we turn to the field of economic pursuits, to industrial life, that we find that the scientific spirit has been able to develop an efficient and well-organised mechanism in accord with the new world view. Here science is frankly recognised as the only method that will insure success. Whatever forward-looking intelligence there is abroad in the world of to-day finds itself most at home within the orbit of industrialism. Here problems are approached in the new scientific spirit that would examine all questions with a total disregard for tradition and custom.

Economic motive is thus forward-looking. It takes its stand on the side of adventure in the sense that it dares

to confront the new without continuously looking over its shoulder to see what has gone before. It would break with the old and experiment with the new methods even at the cost of losing some of its most cherished beliefs. Here intellectual alertness is the order of the day, and mind is working under high pressure. It is not surprising that the technique of the new economy absorbs and engrosses all of the energy and intelligence of those concerned with its processes, and that by comparison the activities which lie outside of its sphere seem flat and futile.

VI

It is a bold enterprise for the human mind, which has for so long made use of the props of religion, to attempt to live in a universe wherein experience and a scientific interpretation of events shall serve as its only guide. The mind of man craves certainty, and is willing to abide by the edicts of authority long after they have lost all social value. This explains the vitality of the dogmas and creeds which survive to-day in spite of the fact that they cannot stand the test of science.

Man deliberately builds barriers to his universe within which he may feel a measure of certainty, permanence and security. But with increasing experience the barriers set up become inadequate and irksome. This accounts for the continuous striving for greater freedom that history records. To create a new and broader field for his activities wherein he may feel secure and at home, is the impulse that has driven mankind forward along the path of progressive development. Every succeeding generation is on the lookout for new and more efficient methods of social control. It is this plastic and constructive quality

of mind that is the most precious inheritance of the race.

The institutions which in the course of history man has set up are in the nature of the frame, the boundaries of his economic activities. From the simplest and most rudimentary beginnings in keeping with a primitive economy, through all of the various stages until the national state system of our own times is reached, we may trace this process at work. It is in order to give more adequate scope for economic development that political boundaries have in the course of the ages been extended. When a new economy was ripening history shows us that the political barriers previously existing were battered down to make room for a broader field of activity. Conversely when an economy decays and there is no new one to take its place, the political system becomes too vast and empires fall apart. Thus we may account for the decline of the Roman Empire, and the primitive economic system reverted to in the West. The Napoleonic state system collapsed because at the time there was no economic technique available to support it.

To-day the barriers of national States are hampering and restricting the development of a world economy which is technically possible. Economic activities have, during the past half-century, become international, and are seeking to break through the trade barriers of national States. We can here find an explanation of the drive towards imperialism and world power that led directly to the World War. In order that the new economy may flourish the barriers of national States must in time disappear. National economy is being replaced by world economy; international trade agreements are already

common, and an international point of view is more and more pervading the economic world.

VII

The new economy demands in the first instance that the mental barriers based on national prepossessions and prejudices be discarded. A new international or rather supernational mentality is required. The conception of humanity in place of nationality is part of the widened intellectual outlook. It is showing clearly the wholly irrational nature of our likes and dislikes, founded on ideas of nationality. Industrialism is proving that no nation or people has a monopoly of economic capacities, but that all can learn the processes of industry. The same machinery can be worked by Chinamen on the Yangtse as it can by Englishmen in Lancashire, Italians in Lombardy, or Americans in Massachusetts. Industrialism knows nothing of national barriers. Its chief concern is with markets and sources of raw materials, transportation facilities and efficiency in production. It is thus neither local nor national; the world is its field.

But it is not surprising that it is proving so difficult to substitute the new international point of view for the older limited, national mentality. The ruts of mental habits are deeply grooved, and there are powerful forces at work to whose interest it is to see to it that we should not get out of the old rut. The natural mental inertia of the majority makes all change slow and arduous. Even otherwise enlightened minds fear the consequences of a radical change in the existing order. Some go so far as to picture a relapse into anarchy should the sovereign state system with its multiplicity of national boundaries and barriers disappear. They advocate a more uncom-

promising national patriotism to take the place of the declining religious influences as the props of morality. "The more the influence of religion wanes," writes Professor McDougall, "the more urgently and obviously do we need the influences of enlightened patriotism and group loyalties of every sort." [1] And he goes on to declare that national patriotism is the greatest moral force of the age.

In spite of these protests the trend of events is towards a new interpretation of humanity that would override national patriotism. The economic motives of the new age are being moralised, in so far as it is possible to develop an international mentality. In confirmation of this view we need but notice how far the new industrial economy is breaking through national barriers, and is in a fair way of establishing itself firmly on international foundations.

Co-operation is replacing competition in the organisation of a world economy. It is bringing forward very clearly the urgent need of some form of international federation that will make it possible to do away with national barriers. A world economic federation in place of the present national state system is in the first instance required in order to give to the new scientific technique of industrialism a sufficiently broad basis upon which to flourish.[2] National patriotism is too narrow a conception in a world that is daily becoming more closely united by the increasing efficiency of the means of communication.

[1] Cf. *Ethics and Some Modern World Problems,* p. 64.

[2] The International Economic Conference held under the auspices of the League of Nations at Geneva in May, 1927, where the representatives of fifty-two peoples and eight of the most important international bodies met to discuss the world economic situation and frame measures with a view to bringing about world unity in industrialism, is a significant step in this direction.

Furthermore the interdependence of peoples is no longer a theoretical problem, but an actual fact. This requires a complete revision of the older moral standards. We can no longer accept the idea that national patriotism is the great force making for morality that it has been in the recent past. It is because we are outgrowing the economic methods that could only support more or less precariously the national State that the new world view is possible.

VIII

We are entering upon an era of a world economy which requires a broader social outlook. A new interpretation of freedom is being offered through industrialism which requires us to readjust our moral standards. There is no reason to suppose that mankind does not possess the intellectual ability to develop its capacities to the extent required to meet the new conditions.

It is not difficult to point to the misery and hardships, the drab monotony of the lives of the great majority of industrial workers to-day, and to draw up a drastic indictment of the new economy. No one would claim that a golden age is at hand. It is not even a question as to whether the new system will be better or worse than the old. The age-long problem of man's adjustment to his environment remains as complicated and difficult as in the past. All that is asserted is that a new world view is in the making, and that it is futile to cling to the old one. It is not pertinent to our discussion whether the individual will be better off under the new conditions than he was in the past. What we may be expected to gain in one direction we will possibly lose in another. But we do find a more efficient method of control over, and adjustment to, environment; a greater sense of freedom

and security, and above all an intrinsic worth in life, as lived here and now. A gradual lessening of the besetting fears of the future is another direct gain, and a consequent increase in foresight. This in our view marks a moral advance.

For the first time in history economic motives are linked with social responsibility. An increase of knowledge, a deeper sense of harmony, and the unity of mankind, are the logical outcome of the new freedom.

There are many who at this point will no doubt bring forward arguments to refute this contention. They will quote with satisfaction and approval that "the ethical progress of society depends not on imitating the cosmic process, still less in running away from it, but in combating it." [1] Or cite Dean Inge, who announces that "the European talks of progress because by the aid of a few discoveries he has established a society which has mistaken comfort for civilisation." [2] But in spite of these and many similar utterances, we cannot get away from the fact that the new economy offers more efficient means of adjustment to environment than ever existed heretofore.

As we see it, the development of human culture is taking a new direction. In the evolution of mind a new level is being reached. Whatever other capacities man may possess he is above all else an intellectual animal. It is the possession of mind that marks him off most characteristically from all other species. Not only can he learn by experience, but he can store up what he has learned. He can accumulate knowledge, which makes it possible for him to fill a variety of functions, to play an endless number of rôles on the stage of life. To-day

[1] Cf. T. H. Huxley, *Collected Essays*, Vol. IX, p. 78.
[2] Cf. *Romanes Lecture*, 1920.

this knowledge is not as it was in the past, held to be an end in itself, the privilege of a few, but is the common inheritance of all men, to be used for the purpose of solving practical problems.

The progress of our times must be measured by a new standard. It is spiritual progress, a deepening sense of social responsibility and of the unity of mankind. Here we gain an insight into the significance of economic motives. It is in the social aspect of knowledge, in its scientific application to the facts of experience in order to secure a better adjustment of environment, that moral value is to be sought. Our chief concern to-day is to see to it that the new economic motives find a place in our moral code. No one denies that the older code has become inadequate. The individualist, egotistic conception of righteousness must be replaced by a broader doctrine of social responsibility and obligation. The time is past when introspective analysis, an examination of conscience or the needs of individual salvation in a religious sense are enough. The new culture is showing the way to a social outlook on life. We are better able to gratify our desires, give rein to our emotions, develop our innate faculties as a direct result of the social security which the new economy offers. It is the chief contribution of the scientific world view that it banishes many of the obstacles that prevented mankind from realising a heightened sense of the capacity to enjoy life. It is because this capacity is held in check by a moral code that is out of touch with the spirit of the new age that moral malaise is so widespread. When once we come to understand that the modern temper demands the adoption of a new scale of values, it will be possible to live a more abundant life.

IX

It no longer suffices to accept the universe as we find it. We must mould it to the new purpose that is in accord with the needs of science. In the past custom furnished the only standard of morality. It is inherent in the nature of man to believe that this standard is somehow real. But when we examine the matter more closely we find that moral standards are something added to those facts of experience to which we attribute the highest value. Morality has no existence in the world of factual reality, but is conferred upon certain facts of experience. It is man's intellectual contribution to the world of events. It is his method of giving a sense of permanence to his temporary adjustments to the universe. A moral code seeks to render permanent those methods of adjustment which have proved themselves most effective and efficient. In the past, when the external world was still conceived of as something strange and hostile, it is not surprising that men relied on their own imaginings, hopes and longings in order to formulate a plan of behaviour. But the new scientific world view is fast destroying the validity of this method.

To-day many are obliged to orient themselves in the world without the support, the comfort and solace of the religious view that has so long been of service to the race. We are faced with the problem of rebuilding our spiritual universe. This does not mean that we must reject completely past experience. It may serve a useful purpose if only in showing us what to avoid.

There is no question of a return to the old methods of faith, based on ignorance. What is required is belief based on scientific knowledge. The new moral code must find a place for man's intellectual achievements by taking

science for its guide. The method of science teaches that to know is to realise value. It is value that confers permanence upon the otherwise transient quality of life.

The new economy is offering us a new scale of values: values not conceived in the light of individual possessions but as social welfare. The immediate problem that confronts us is to find some way to offer a better adjustment of the individual to his social milieu, in order that the new values may become facts of experience. Here the economic motive offers valuable suggestions. It is here that for the time being we find the most complete expression of the scientific spirit.

Some progress has already been made in the direction of co-operation, and in the breaking down of national barriers, both physical and mental, in order to make room for the development of the idea of world unity, not as an ideal but as a fact of experience. It is chiefly through the linking together of the new factors of economic experience that the new scientific world view is taking concrete shape.

In the moulding of the new spirit, economic motives are once again in the history of the race in the vanguard. For many generations to come man's economic status and functions will show the way to new values. Here we see economic and social problems joined together. The new economy is building the foundations of the new social order. It is showing the way to a new freedom. The older limitations imposed upon the human mind by a narrower and more limited economy are no longer tenable. As long as they are adhered to there can be no hope of further growth.

Though progress is slow, the new outlook on life has already made headway. Men and women everywhere are vaguely aware that a new purpose in life is in the

making, that the spiritual world of to-day is somehow radically different from what it was even a generation ago, "as different from the spiritual world of, let us say, Robert Browning as that world is different from the world of Cato the Censor. As for this present unhappy time, haunted by ghosts from a dead world and not yet at home in its own, its predicament is not . . . unlike the predicament of the adolescent who has not yet learned to orient himself without reference to the mythology amid which his childhood was passed. He still seeks in the world of his experience for the values which he had found there, and he is aware only of a vast disharmony. . . . To-day the gulf is broader, the adjustment more difficult, than ever it was before, and even the possibility of an actual human maturity is problematic. There impends for the human spirit either extinction or a readjustment more stupendous than any made before." [1]

There is no reason to fear the extinction of the human spirit. Nor is there cause to lament over "this unhappy time." If we will but look beyond the religious to the scientific interpretation of the universe, and take into account the achievements of science in the advancement of social well-being and economic freedom, we have on the contrary cause for high optimism. We will then be in a position to emancipate ourselves from the older ways of thinking, and realise that a new social motive is required that will offer a synthesis of spiritual values in keeping with our industrial civilisation.

[1] Cf. J. W. Krutch, *The Modern Temper,* Atlantic Monthly, February, 1927.

CHAPTER V

The Social Motive

I

THE individual, in seeking a suitable method of adjustment to the world about him, discovers in this way his social environment. To live is to have experience through immediate contact with environment by organising suitable responses. The effort to secure an ever-increasing efficiency of adjustment calls for the intervention of mind in order to find short cuts to appropriate behaviour. Behaviour is invested by mind with a purposive character that it would not otherwise possess. Social relations serve to discover new vistas, new pathways to freedom. Social motives become the goal of individual efforts. Man's activities are socialised and take on a moral tone.

To put it in another way, the love, war and economic motives are striving motives, impelling forces that find an outlet in the social motive. In the social motive, individual motives are not disproved or discarded, they are transcended. Here a further purpose is added to life, values are discovered, and what ought to be is made to coincide with what is. Behaviour is moralised.

The social motive is a mental phenomenon, a product of mind. We must be careful to distinguish it from the so-called "social" behaviour we find in other forms of life which is in reality community life, to which the word "social" should not in our view be applied. To take for

example the communities of ants or bees, or even the group behaviour of herds, and argue by analogy that they correspond to human social life is in our view untenable. Social life in its proper sense implies not merely adjustment to, but control over, environment. It is the factor of control that is important. The community life of ants and bees shows no elements of control over environment. It never gets beyond the stage of submission to environment, a division of labour among individuals of the species, that is structural and functional, and nothing besides. It implies a complete misunderstanding of the term to characterise such behaviour as social.

On the other hand it would be unsatisfactory to limit the social motive to a definite and fixed idea, endowed with finality. It is more in the nature of a rearrangement and adjustment of the conflicting tendencies and purposes of individuals. The social order is the milieu where personality finds scope for development, where the individual as the burden-bearer of mind can be relieved of part of his load, or can replenish himself by calling upon the stored-up achievements of the race.

II

When we attempt to analyse the social motive in order to discover its inner nature, we find that different levels of culture and civilisation apparently offer us various interpretations. It is not, however, sufficient, as is so often done, to declare that man is by nature social, that he has an innate capacity for organising social groups, or make appeal to some such pseudo-scientific idea as a gregarious instinct to account for the social institutions evolved in the course of history. As we see it, social motives are only attained after long and arduous experience, and are even as yet only partially realised. What

we do discover is various levels of complexity and efficiency in organising community life.

It is not the place here to make any detailed survey of the various suggestions offered to explain and interpret social evolution. A given level of culture among various and widely separated communities shows a certain number of common traits and methods of adjustment. Whether we agree with the recent theories of diffusion from a common cultural ancestor, or any other, is irrelevant to our purpose. Nor are we concerned with the question of the comparative merit or value of a given civilisation, whether it is as such higher or lower. Furthermore in our discussion of the social motive we must exclude from consideration all civilisations belonging to the pre-scientific age. They were one and all, whether we look to Egypt or Rome, China or mediæval Europe (and we would include here all those communities where to-day the mediæval mentality survives) characterised by a dependence on a supernatural order, a system of gods and demons, served by priests and necromancers, magicians and witches. Social motives, in so far as they existed, were rudimentary in the extreme. No idea of the possibility of control over environment existed. The question of adjustment was met by devising means of propitiating the Deity, of placating his wrath or purchasing his goodwill.

Control over environment by man distinguishes the scientific world view from the religious interpretation of the universe. It is the great sociological contribution of the Western world.

When at the beginning of Modern Times a more rigid examination of the facts of experience was undertaken, it was discovered that the stars in their courses were not, as for so long had been firmly believed, factors that

determined man's destiny, the signs in heaven of the will of a divine power that dwells there, but phenomena that are to be interpreted in a mechanical way, belonging to a natural order of their own. Here we have the origin of modern astronomy, of the Copernican theory that was to inaugurate scientific method which led to the study of nature, and the gradual development of physical science. Once the method of science had gained recognition, it was only a step to emancipate man from subservience to natural forces, and show that by the application of his intelligence he could be in a position to exercise control over his environment and make himself the master of his destiny. A new pathway to freedom was opened. A new world view was offered to mankind.

For the past three centuries men have been engaged in the work of perfecting the technique of adjustment to environment in accordance with the new principles. They have been content to build the new science into the older social edifice without disturbing more than was absolutely essential the religious world view.

The transition from a religious to a scientific culture has thus been going on for many generations. The Deity is gradually relegated to the background. Religion becomes an avocation as the scientific spirit is given free scope for development.

III

It is difficult to exaggerate the magnitude of the change of outlook on life, and the mental readjustment that is necessary, to substitute the new scientific interpretation of the universe for the old religious view; to accept the idea of man's control over the processes of nature for the idea of his subservience to his environment; to navigate a ship by a compass instead of by prayers and sacrifices;

to improve harvests by use of fertilisers and agricultural machinery instead of by magic rites and ceremonies. How different in its social aspect is a world view that rejects as unfounded the older religious conceptions that poverty and disease, crime and war are part of the divine plan, punishments for the sins of mankind! Henceforth these as well as all other questions are dealt with by science with the view to discovering more efficient methods of control. In seeking to perfect these methods, man's inventive genius was aroused. It thus came about that a galaxy of inventions ushered in the age of science.

Though long accustomed to the use of tools mankind had not considered the problem of perfecting them. Prior to the 16th century, tools had, judged from our standpoint, remained rudimentary in the extreme. Whatever refinements had been introduced in the course of the ages were in the nature of embellishments of existing tools, rather than in the extension of the field in which tools might be made available.

It has often been pointed out that it is by his use of tools that man is distinguished from the rest of the animal kingdom. When men began to use their first tools the course of evolution was changed. The evolutionary process became mental. Mind took its place in the evolutionary series, and social life under the guidance of reason began. It is possible to retrace how from such crude beginnings man became an observer of the world about him; began to use his mind, developed in consequence his manufacturing and trading capacities, and adopted a form of division of labour that led the way to social life. Throughout the process, it is mind that directs the activities of men in their relation to their environment. We have already left biological evolution behind, and entered upon the path of sociological development.

Though from the outset man sought to secure the best possible adjustment to his environment by using his mind, he was to a large extent unconscious of his capacity to do so. The world about him was an unknown, a terrible world, and he devised the religious method as the most suitable to his purpose, owing to the primitive nature of the tools that were available to deal with nature and natural forces. Man felt himself insignificant and impotent in the face of the powers which his imagination pictured as the agencies of natural phenomena.

Notwithstanding the high level of civilisation reached at various epochs in history, until Modern Times in the West it never apparently occurred to mankind that it could control its environment by taking into account, not its hopes and fears, but common knowledge based on actual experience. If mind could be used to fashion a certain set of tools which experience showed offered security and well-being, new tools might be invented, new methods of interpreting natural phenomena devised that would give to the individual a preponderant place in the universe. In order to do so the notion of a God-ordained universe had to be discarded.

IV

The history of the efforts to substitute machinery for manual labour, the perfection of new tools and of the technique of science in order to devise more efficient methods of control over the physical universe is at the same time the story of the substitution of a scientific for a religious world view.

In spite of the fact that people were everywhere willing to profit by the inventions that science offered, accepted with alacrity the benefits that machinery conferred and were eager to take advantage of the increased well-being

resulting from the control over environment, they were reluctant, as many still are to-day, to adopt the scientific world view as offering a guide of social conduct.

The religious interpretation of the universe, so long firmly embedded in mind, though pried loose, has not been dislodged. There is a haunting suspicion even to-day among otherwise enlightened people, that science may be all very well in its field, but after all it is a limited field, and science is not equipped to deal with the spiritual side of life. Suffering and sorrow, fear, old age, death are, so they claim, beyond the province of science; here alone religion is efficacious. Nor is such a view altogether incomprehensible.

Science has in the past been so preoccupied with the problems of the physical universe, the achievements of applied science have here been so dazzling, that the world at large accepts without question the word of the scientist and scientific method in all matters relating thereto. But when we approach the problems of spiritual life, of mind, of the emotions and passions, where the results of scientific inquiry have only as yet been fragmentary, it is another matter. Many are unwilling to see that these problems can be and are studied by scientific methods similar to those of physical nature.

Psychology is offering relatively as scientifically accurate solutions to the problems of the individual and social organism, of mind, as physics or any other natural science is in its department of knowledge. The great difference is that during the past three centuries a vast body of data in the physical sciences has been accumulated. These sciences have been able to emancipate themselves completely from all semblance of religious control. This is not the case with the psychological sciences. Psychology has been accumulating its data scientifically in the face of

overwhelming prejudice for little more than a generation. In dealing with the problems of the individual mind and of social behaviour, science would apply the same methods as are applied in the study of nature. To exclude the validity of science from the one is no more justifiable than to exclude it from the other.

The complex social edifice and the industrial civilisation in which we live can only be understood if we accept science as our guide in the domain of mind, and substitute a scientific for a religious world view. If we do so a new world scheme reveals itself. We discover a universe controlled by man. Here a new interpretation of the individual emerges. He is no longer the submissive and subservient puppet of circumstance, but acquires social significance in so far as he is able to profit by the freedom which science offers. The individual becomes a person who is a free agent within the orbit of his social milieu.

Personality is the mark of the socialised individual. It is the symbol that the lifelong hereditary servitude of the mind of man to superhuman, occult forces has for all time been abolished. Mind here takes its place in the order of nature as a function that is capable of being scientifically studied and understood, whose efficiency may be improved in order to give an increased adjustment to environment. Henceforth human nature comes to be regarded as a force capable of being controlled. This control is the aim of the social motive.

V

The idea that human nature can be controlled, just as physical nature is controlled, is the characteristic feature of the scientific world view. Though there are many wide gaps in our knowledge of mind, yet psychological study is revealing that we have here the key to a new

science of life. We are standing on the threshold of what appears to be a new departure in the evolutionary process, not unlike that which took place when man first made use of tools. Mind is now to be regarded as a tool that will make possible the control of that complex mechanism which we include under the name of human nature. Human nature, instead of being fixed and unchanging, ever and always the same, takes its place in the evolutionary series. Behaviour is no longer a mere reaction to environment, but is, in so far as social, consciously adapting itself to new situations as they may arise.

It is impossible to gain an understanding of the self-reliant affirmative development of the individual as a personality without taking into account the shifting of the centre of gravity in social life as a result of the change from religious attitude of submission to envroinment, to a scientific world view which implies control over environment. As a consequence the individual is no longer an isolated unit, only bound by ties of blood to his family or his race, but conceives himself as an active agent who can learn by experience, and shape his conduct in accordance with the needs of new situations as they may arise.

It is the especial contribution of scientific thought that it enables man to deal with experience that he has never met with in the past. Here positive action replaces merely automatic reaction. Instead of looking for precedent, science would show the way to be forward-looking in order to organise experience, and turn it to most profitable account. This demands a radically different outlook on life, to which mankind, even among the most culturally advanced races, has not yet grown accustomed.

Science during its preliminary period of growth in Modern Times, roughly from the 17th century to the

20th, concerned itself chiefly with questions of control over the physical universe, over nature and the inorganic world. It is now concerned with the far more complex problem of control over human nature, over the psychical universe, and over the social world.

A social motive is now taking shape which is fraught with momentous consequences for the race. If the control of human nature is possible in the same way as inorganic nature has already been brought under control, new institutions are necessary in order that the new conception of humanity may have free scope for development. The scientific economy offers the foundations upon which these institutions may be erected. The inventions and discoveries of applied science, the technique of industrialism, are already available. But what is still apparently remote is a proper receptive attitude towards the broader social implications of science, an understanding of the new social motive which the idea of scientific control over human nature demands.

As long as it was believed that all evil is part of a divine plan, that man is from birth steeped in original sin, that redemption is necessary, and to be saved is a reward held out by God, the idea of scientific control over human nature had no room to develop. The emphasis in the religious world view centered about a superhuman interpretation of the universe. It proclaimed man a special creation directly dependent upon the will of the Deity. Human nature was conceived of as something fixed and permanent, unchangeable and beyond the province of man's own control.

The scientific view of life relegates all such and sundry ideas to the scrap heap. It would prove conclusively that human nature is like any other phenomenon, the proper subject of scientific inquiry, that the behaviour of the indi-

vidual, which is the outward manifestation of this nature, can be controlled, not by reference to an extramundane power, but by social motives that may be scientifically determined.

VI

One of the great contributions of the study of sociology has been to trace the motives of social behaviour to their historical origins. We discover here distinct evolutionary stages, and conduct is shown to be governed first by custom that implies unconscious uniformities of behaviour, similar to habits in the individual; then by *mores* or customs where a relatively conscious adherence to a given code of conduct is discoverable, though there are still few moral implications; and finally we come to institutions where the apparatus of social control is the result of reflective thought, which find expression in a given social organisation and a moral code.

When a new world view is taking shape, it does not find the institutions necessary to give it expression, ready-made. It must pass through the preliminary stages by making use of those institutions already in existence. Though it is not the place here to pursue this historical analysis further, it is susceptible of proof that among civilised peoples that have developed social institutions, a new world view only comes into existence when the existing institutions have grown inadequate.

To-day all that still remains of religion are its institutional forms. These are serving as the frame-work of the social order that is being evolved under the guidance of science. The changes and modifications in social motive that have already been introduced are traceable to the rise of modern science. The political state system, the growth of secular authority, the new political economy,

all coincide with the birth of the modern scientific spirit at the close of the Middle Ages which was destined in the course of time to displace the religious interpretation of the universe.

The scientific world view must not be conceived as something altogether separate and different from the religious, but as an outgrowth of the latter, its legitimate heir. There is here no dramatic change in the course of evolution, though a new direction is being taken. While the older religious interpretation of the universe must be abandoned there is no warrant for assuming that the new scientific world view cannot satisfy to the full the spiritual needs of man. On the contrary, it is precisely because science can afford more adequate spiritual guidance by showing the way to control human nature that it is replacing the religious view of life.

VII

The control of human nature through man's own effort gives to life a new purpose. The essential needs of man, determined by the complex and interrelated motives of sex, fear and hunger, are gathered into a new synthesis which we would call the social motive. Here the purpose of life finds a fresh interpretation in that it supplants a merely individual adjustment to environment.

The individual henceforth is held to be an integral part of the social order, a transient element in a relatively permanent social milieu. It is within this milieu that man seeks for a new path to freedom, and not in a world beyond it. In so far as he is successful in his quest, in so far does he realise himself as a person.

Personality is the highest expression of the social motive. As we have already had occasion to point out, a person is a completely socialised individual, a free man.

This freedom does not mean a total disregard of social needs, to do as you please, to be above the law as is all too often believed, but assumes that the individual will share in the responsibility of furthering the general welfare, and will regulate his behaviour in accordance with the demands of life here and now.

Personality implies not merely adjustment to environment, but a striving to control this environment, to make the world a better place to live in. If the individual is to succeed in reaching the level of personality he must overcome his egocentric attitude towards life, and the idea that his salvation is the important fact towards which all of his efforts are to be directed. He will then realise that the world we live in, with its apparently ever-changing, futile, purposeless problems, is the only one with which he is immediately concerned; that the reality of this world is not an abstraction, as philosophy has taught for so many centuries; and above all that the unity of this world of ours towards which our best efforts are directed, is of our making. Humanity is in this sense a creation of personality, a reflection of the unity attained by the individual. World unity is not so much of things, as of minds.

The horizons of our world are broadened. Private privilege and national patriotism alike seem narrow and petty conceptions, unworthy of the social motive that the idea of humanity implies. Individual privileges and prerogatives, ideas of political liberty and equality, the sovereign nation-state itself, are survivals of an age that is passing and no longer correspond to existing needs. The tendency of the times is to break through these barriers, inherited from a pre-scientific age and a time when the freedom that our industrial civilisation offers to all was unthinkable. Economic freedom would show the way

to emancipation from toil, the leisure to enjoy the good things of life provided that the social motive is not lost sight of.

During the past three centuries, the peoples of the Western world have been so engrossed with the struggle for political freedom that no other interpretation of freedom was taken into account. But when once this freedom was attained, it was discovered that a new freedom was to be won—economic freedom. This is the problem of the new age. But unlike political freedom, which refashioned the older religious world view to fit its needs, economic freedom requires a new world view. It requires that the scientific interpretation of the universe be accepted and that the older individualism be discarded to make way for a social outlook. The individual must rise to the level of personality, and accept the full responsibility for the part he is to play in social life.

Economic freedom cannot be expected to develop without the acceptance of the scientific world view, that is at once creative and constructive. It implies at the same time a new sense of moral freedom which knows no other rule than that of efficiency. It points to a new harmony of purpose that recognises human nature to be part of the natural order, capable of being studied scientifically, and in consequence modified and controlled. It signifies a view of life that is thoroughly "socialised," which in our times is coming to be synonymous with "civilised." Here the new morality has its origin. Here the pathway to the new freedom lies open.

VIII

The new moral freedom would take into consideration the personal aspirations of the individual. It would act as an energising force and discover new opportunities

for control through mind. The religious world view at the highest stage of its development could conceive of nothing more noble than the submission of the individual to his environment, to be attained by the grace of God. The scientific world view offers in its place the social motive of control over environment by means of man's own efforts.

The obstacles placed in the way of the full realisation of the social motive, by notions inherited from the religious doctrine of special creation, which we now know to be false, have rendered difficult the more rapid spread of the idea that mind is a fit subject for scientific study, and as a natural corollary that mind can know itself. Fortunately this prejudice has all but vanished. When once we are in a position to account for the behaviour of the individual as the result of psychological factors that may be studied just as physical and chemical elements are studied, we may hope to arrive at a scientific understanding of personality that will be of service in formulating laws of conduct which take these factors into account. For the time being we must be satisfied with pointing out that the social motive, which is the sum total of individual motives of behaviour as gathered up in personality, furnishes us with the data needed in order to outline a new moral code.

The social motive is not to be conceived of as something fixed and permanent, but is a growing, changing, maturing, decaying principle of action, as changing and changeable as human nature, as mind itself. In the same way morality, in a scientific interpretation, is not to be looked for in an arbitrary code of rules of conduct. Moral laws, so-called, are not fixed and eternal truths, but merely the by-laws of behaviour. The laws of behaviour, in so far as they may be said to exist, are

psychological factors inherent in the nature of mind. Here we will find proof of the provisional nature of morality, to which we have already had occasion to refer.

IX

Throughout the course of history we may trace the changes in the tenor of the moral code of a given people coincident with the gradual evolution of a broader social outlook. But nowhere in the past was a true social motive ever developed. Christianity, which it was claimed had a universal, social purpose and preached a doctrine of humanity and the brotherhood of man, never took into account the unique nature of the human mind, or the possibility of the control over human nature by man himself, which is according to a scientific world view the foundation of the social motive. Christianity taught men to think in terms of another world, of the City of God, of the last judgment, of a life after death. Humanity, according to the Christian doctrine, was concerned exclusively with the relation of the soul to God, and never dared to face squarely the problems and perplexities of life in this world. In so far as it did so it was to deny all value to earthly things in comparison with those of a heavenly universe. Every man in his loneliness, one by one, had to come face to face with his all-powerful God, to be judged by Him according to a pattern of life laid up in heaven. It was not until mind with the help of science was able to emancipate itself from these superstitious fancies that in the course of time a new interpretation of life and a social motive could develop.

After the close of the Middle Ages, the individual asserted his autonomy, and emancipated himself from the Church in so far as affairs of this world were concerned. He came to recognise the fundamental importance of his

worldly values and pursuits. Religion remained, however, in full control of the realm of spiritual values, and to this day morality is by the majority still thought of as a code of conduct depending upon religious sanctions for its validity.

In Modern Times man has become a free agent in all that pertains to his secular pursuits. He has cast off all semblance of religious guidance over his worldly activities which are acknowledged to be of principal importance to his welfare. But in spite of the decline of religious influence, in spite of the acceptance of the methods of science in dealing with all other problems of social life, in so far as morals are concerned, the majority still cling to a traditional way of thinking, and look to the Ten Commandments and the Sermon on the Mount.

It is no longer a question of the abstract value of religious morality. It is not that the Christian or any religious moral code is worthless, but that it is not adequate to meet the needs of men who live in a scientific age, where economic freedom is the goal of all effort, and the world we live in acknowledged to be the sole scene of man's activity.

The religious moral code is of necessity based on a primitive pre-scientific psychology. It knows nothing of the contributions of science to our knowledge of the motives of conduct. It more often than not misinterprets behaviour, and puts the seal of sin on acts that science can often clarify, understand and in consequence remedy. It disregards altogether the important question of social motives governed by experience and the fact that human nature is like the physical universe capable of scientific study and control.

In brief the religious moral code finds no room for personality as we have sought to define it, and the social

motive as the norm of conduct. It never can go beyond a rigid standard of right and wrong. *To obey* rather than *to know* is the foundation of such a morality. It would keep the minds of men enslaved to ideas that, though useful in another age, have to-day lost all semblance of social value. The unrest of our times is chiefly traceable to this source. The old morality is no longer valid, and the new code has not as yet been endowed with sufficient precision to command authoritative acceptance.

If a way out is to be found, morality must look to science and not to religion for support. Scientific knowledge must be accepted as the basis of behaviour. Morality, if it is to take its place in the vanguard of civilisation, must be brought up to date and offer us a synthesis of the scientific world view. In no other way can we expect to bring order out of the spiritual confusion so prevalent throughout the world.

CHAPTER VI

The New Morality

I

THE highest achievement of mankind is not intelligence, but morality. Though our ways of thinking, our intellectual processes, are important, our ways of acting, our behaviour, is more so. It is the striving to arrive at the most efficient forms of behaviour in order that the living of life may be worth while as an end in itself that marks the ascent of man. It is in order to be able to live affirmatively, to find his way through the maze of events and realise himself more fully as a person that throughout the ages man has established new institutions.

We may trace in history a continuous and progressive effort to attain a higher degree of efficiency in adaptation to, and control over environment, a higher unity than existed heretofore. In the past this unity was best achieved through religious channels. God represented the most efficient moral agent. Union with God was the apogee of morality. We are now reaching out for a new type of morality. Spiritual excellence, no longer a matter of blind faith, becomes in the scientific world view a question of enlightened knowledge. Morality no longer made in heaven, descends to earth and finds its confirmation, not through divine sanctions, but in efficient living.

We have reached the stage to-day where behaviour is no longer considered as mere mechanism, but as a path-

way to spirituality. The supremacy of morality is not impaired because we discard God as an efficient moral hypothesis. It is to science that we must now look in order to discover a new and more valid hypothesis in keeping with the scientific temper of the times.

The old duality between idea and existence, between God and man, has become untenable. Man has ascended to the level of deity in so far as his life manifests evidence of an efficient adjustment to the complexities of his social milieu. In the process the worshipped God is relegated to the dim background, and recedes from our view altogether. Religion no longer offers a successful method of approach to the problems of life. Science replaces religion as the cultural focus of social life.

II

Common sense, which is the foundation of science, requires that the accepted beliefs of the religious world view be re-examined. We have in the course of this survey sought to conduct such a re-examination and discovered that the scientific world view does not attempt to find some ulterior motive of behaviour, but is concerned with outlining the best method possible of efficient action. It is in finite events, not in some nebulous hypothesis of the infinite that we come upon the material we are looking for. Things are not only what they seem, but are as they are for reasons inherent in them.

Science teaches us that all life, your life and mine, are events. Your biography is the history of an eventful life. As such it is the story of an efficient or deficient moral agent. As Mr. Broad has pointed out, "Human bodies may be temples of the Holy Ghost, but they are in the first place physical objects just like tables and chairs. Nevertheless they do occupy a peculiar position among

physical objects. Each one is connected in a perfectly unique way with an observing mind which looks out at the rest of the world from its body. Each of these minds has a peculiar knowledge of its own body which it does not have of any other body in the universe." [1] Here we see the unique quality of mind, joined with physical objects. The idea of a Holy Ghost becomes superfluous when man takes cognisance of himself as a moral agent. He is now for the first time able to stand alone. He requires no divine sponsor, no superhuman guardian. His actions are moralised, as we have pointed out, in so far as they reveal themselves as efficient. Spiritual relations are here joined with temporal activities, and out of this unity a higher morality takes shape that we would include under the term *humanity* or the unity, the interrelation, the interdependence of mankind.

III

In the light of science man is no longer an isolated unit set down haphazard in a patternless, purposeless universe, a superior being specially created, and endowed with divine attributes by the grace of God, who can only realise the highest good with the help of his superhuman creator. The new morality would mark the emancipation of the spirit from this other-worldly way of thinking. It no longer looks to an extra-mundane sphere. The grave is no longer the yawning abyss that separates life in this world from that of a better life in a world to come. The empty tomb of Jesus, the corner-stone of the Pauline conception of resurrection and the life everlasting as the foundation of morality that has dominated the Western world for so long, becomes a myth.

[1] Cf. *Scientific Thought.*

As the general theory of relativity has served to break down the distinction, the isolation of space, time and matter in the physical universe, so the new morality would break through the isolation of man to man, the distinction between the divine and the human. As mind and matter are coming to be held to be one, so the divine and the human are seen to be all of a piece, part of the behaviour of each of us. The ascent of man to the level of personality shows the way to a new and higher unity than that offered through religious channels.

Here we come upon a radically new interpretation of morality. Life, your life or mine, is no longer to be held to be like an empty barn in which to store up good deeds like so many bales of hay, so that the most moral man is the one who has the most bales in his barn. Morality implies nothing more than a way of life that realises to the fullest the implications of personality. It is behaviour that determines morality, and not morality that points out good deeds, so-called. It is idle to speculate about the prerogative of immortality, or of rewards and punishments in another world system. The new morality is concerned exclusively with the problems of every-day life. It would focus attention on these problems as they confront us, and teach us to apply the best scientific technique available for their solution. Thus morality is all of a piece, and as such essentially a worldly affair. It distinguishes between the true and the false, between good and evil, not by an appeal to the edicts of a God, but the test of scientific method. It is primarily concerned, not with the theory of life, but its practice. In the last analysis it is interested only in behaviour.

The new morality recognises the unique and special

character of every individual, and at the same time assumes a certain fundamental unity of mankind. Thus social responsibility and moral obligation are part of a same system, and duty coincides with virtue in so far as it assists in discovering a more efficient way of life. The one best way becomes the moral norm of existence. The individual in so far as he strives to discover this way, in so far as he succeeds in following it, leads a moral life, regardless of any previously existing sanctions of a religious nature. Morality is here separated from religion and placed under the guardianship of science and the scientific world view.

Behaviour that is moral is no longer mere mechanical compliance with certain religious rules of conduct, but implies essentially appropriate action. Adjustment to and control over environment are the two stages in its outward manifestation. Morality in this light is not something to be learned by rote, such as was the case under religious control with its code of categorical commandments, its ritual, its cult, and long list of prohibitions. But rather it requires the personal effort of every one of us to adapt ourselves to given circumstances as they arise, to strive to mould and shape the course of events, not guided by blind fears of an ultimate destiny, but by a present responsibility. It is the individual who contributes to life its moral character through his personal conduct. He is the maker of morality, and creates his moral code as he goes his way through life. His example may influence others, and does so influence them in so far as the fundamental unity and solidarity of mankind are more fully realised. The new morality is made up of these individual contributions, and would recognise that all behaviour is moral in so far as it promotes social welfare.

IV

There are those who will at this point object that this is all very well but that such a description of morality is too vague and ill-defined. They would have us set down a table of laws or give them a catalogue of moral acts, a new decalogue of some sort. But until we are rid of the habit of looking upon morality as something bound within the limits of a table of specific permissions and prohibitions, we have failed to grasp the implications of the scientific world view which knows no authority save experience, no guide other than efficient living.

It is because so many to-day still feel cramped by following rigidly the Ten Commandments, or criminal for violating them, that moral maladjustment is so wide spread. It is because so many are trying to live by a religious code that has lost all significance in the modern world that they find it so difficult to adjust to life. Here conduct and character are pulling in opposite directions instead of being driven smoothly abreast.

The new morality makes it possible to bring conduct and character into harmony, by showing that conduct is moral in so far as it is efficient. It leaves to one side the qualms of conscience arising from the effort to adjust the discrepancies of a life lived in a modern, scientific world which requires appropriate behaviour of its own, and a moral code which belongs to an obsolete religious world view, and would mould character as well as conduct in accordance with principles belonging to another world system. Behaviour as it ought to be, that is to say morality, arises as the result of the impulse to lead a better life. In so far as this behaviour as it is coincides with behaviour as it ought to be, in so far is moral perfection attained.

What then are the motives of behaviour as it ought to

be such as we conceive them to-day? We have examined in some detail these motives and sought to show in how far a scientific interpretation of the universe is making possible a new sense of moral freedom. We discovered that social efficiency requires a new definition of moral motives, and sought to arrive at an unbiased view in describing the various phases in the evolution of the idea of the highest good. New interpretations of value have emerged. Foremost among these is a new scale of economic values as part of a striving after a new freedom —economic freedom—which the scientific technique of industrialism would make possible.

It is the rise of the new economy that requires the formulation of a new moral code. If character and conduct are to go hand in hand, and not be continuously at cross purposes, character which is the summing up of the motives of behaviour must have its foundations, not in some esoteric world view, but in the world of events where conduct dwells. While the moral experience of the race is not to be disregarded, the time has come to recognise that we are in a position to advance a step further and take into account the knowledge that science offers in formulating a new moral code. Here again we see that the new economy of industrialism requires a fresh interpretation of values, and in the process much that in the past was left out of the moral scheme is in a fair way of becoming moralised.

V

What *ought to be* is the ground of what *is*. It is not a question here of goodness, virtue, righteousness or truth in the abstract. Morality would concern itself exclusively with the world of actual experience. As the scientific world view is nothing more than reflection upon experi-

ence with the object of discovering the one best way of life, so the new morality confines its attention exclusively to this world of experience, and requires no other confirmation for its validity. Seen in this light, the field of morality is narrowed down to the realm of the practical and the plausible. The aim of morality is nothing more than to serve practical ends. The time is past when morality was endowed with a superhuman character. It is no longer to be the object of metaphysical speculation. Its frame is not that of the universe. It does not lay claim to the whole realm of goodness or excellence, but such part of it is "relevant to morals only when it is qualified in a very significant way." [1]

Here the question of values arises, and it is in those especial aspects of behaviour that we conceive of as moral that value takes definite shape. Moral values are attainable values. They are particulars of a general situation that can be made to serve our needs. Moral value is the added fact in a given event, the personal contribution of the individual and not a characteristic inherent in the event itself. Morality would show the way to fashion our conduct in order that the one best way is made plain to all of us. Here we come upon the first factor of morality in the scale of values—*education.*

Education is the precursor of efficient action. Man is not by nature efficient, just as he has no innate moral faculty. Efficiency, upon which we would base morality, has to be learned. Moral education, a special branch of general education, should teach us to distinguish, not so much between the good and the bad as was the case under religious sanctions, but the best method of adjustment to, and control over environment. It should offer something in the nature of a map of life that may show the

[1] Cf. John Laird, *A Study in Moral Theory,* p. 1.

way to efficient living. It implies an understanding of the mutual interdependence of mankind, the breaking down of the barriers that tend to obstruct the idea of world unity and humanity.

In tracing the development of moral ideas, we find ourselves at the same time relating the history of the race in its onward march towards social solidarity. In spite of the numerous setbacks we find a continuous unfolding of the idea of the brotherhood of man. From the most primitive family, tribe and clan organisation down to the idea of a world state, and world unity from which the conception of sovereign statehood is absent, we may see this process at work. Never has it been so near to realisation as in our own day. The causes for this are not far to seek. For the first time in history we are on the eve of a world economy. The technique of science is making possible the realisation of a physical as well as a spiritual world unity.

We have in the course of our inquiry pointed out the various factors that are contributing to the breaking down of the barriers of national exclusiveness. The scientific world view belongs to no one people or race. Though its cradle was the Western world, it is capable of being, and is being accepted and developed in the East as well. But much remains to be done along lines of education in order that the mental barriers that separate the peoples of the earth may be broken down, just as the physical barriers are already being overcome. A new catechism is required that will leave far behind the prepossessions of a religious or national point of view. Just as the dominant moral ideas of the Jews as a chosen people were displaced by Christianity, so the exclusiveness of the Christian ideal must be abandoned and give way before the new scientific world view.

VI

No more striking argument in favour of a new moral code, based on the scientific world view need be adduced than the mutually exclusive, narrow and inconclusive nature of the religious moral codes in vogue among the various peoples of the earth. The efforts to spread the Christian code among non-Christian peoples have failed, while scientific method is daily gaining headway. Nor is it any longer adequate to seek to replace religious loyalty by national loyalty as was so successfully carried through during the first stage of the evolution of science in Modern Times. For the past three centuries, while the scientific world view was slowly spreading across the Western world in the wake of the decaying religious world view, national loyalty served as a valid social motive in consolidating the national state system as a broader foundation for the growing scientific economy. The local loyalties of the manor house were replaced by national loyalty. Now a further step in advance is required. The new morality would teach that national loyalty is too narrow a conception in a world that has accepted openly a scientific, in place of a religious, economy. The new world view in the making, demands an international, a supernational, a truly cosmopolitan outlook.

National loyalties may for the time being be retained, just as provincialism survived after the close of the mediæval age. But national loyalty is no longer a constructive social force, and is destined to disappear when a more enlightened understanding of the new social purpose makes itself felt. This is the first task of education. It must discover means of inculcating the conviction that the idea of humanity is not merely a remote ideal, but a moral fact, the most important fact of social experience. We must learn a new type of behaviour that leaves far

behind the accepted code of national loyalties. Just as education was by degrees freed from the control of religion and the Church, became secularised, and passed under the control of the national State, so to-day it is passing under the control of science, and must concern itself with the problems of a scientific world view that transcend the boundaries of the national state system.

No one denies that we are living under new conditions, in a new world. The ground has been cleared for the frank acceptance of the scientific standards of life. But many still do not seem to realise that the new outlook on life possesses elements of goodness and excellence of its own which makes possible the development of new moral values. Here we come upon the second factor in the evolution of the new morality—*public opinion.*

VII

If education is to be so directed as to secure a better adjustment to environment, and efficient behaviour is something to be learned, public opinion is the controlling agency of all social contacts that moulds and shapes the course of events. The control over environment is a matter of public opinion.

It is not the place here to undertake an analysis of public opinion, nor even to sketch in brief outline its historical evolution. The scientific world view, with the publicity that it would give to all of the facts of experience, is unthinkable without public opinion. Public opinion implies that the moral order limits and defines the actual order of the universe which science would investigate and lay bare. It shows us clearly that mankind can get along without a divine lawgiver. It relies solely on enlightened judgment, and confirms to us that morality is a social product.

Public opinion which is continuously in process of revision, is thus in the nature of a spiritual activity that has for its object the control over human nature as well as over environment. It passes judgment on the efforts of individuals to adjust to environment, and pronounces these efforts to be good in so far as they promote social welfare. Public opinion becomes the arbiter of individual acts, and predicates values which the individual seeks to realise. Here duties and obligations receive their sanction, and the pattern of a good life is mapped out.

It is through public opinion that control over human nature is best promoted. Individual desires and longings, hopes and fears, as well as the ripe fruits of knowledge, are given publicity. Man is no longer left in his isolation to establish for himself his rules of conduct, but a sense of social responsibility is awakened which finds in public opinion adequate confirmation.

While the individual in continuously seeking for more efficient methods of adaptation to environment has a tendency to go beyond the limitations of this environment and strike out along new paths, public opinion serves as a regulating agency that would check his exuberant energies along lines of assertive egoism, and remind him of his social duties. The true function of public opinion is to stiffen the moral fibre of the individual by limiting his activities to the affairs of this life. Here the social purpose takes precedence over individual desires. It would rearrange experience in promoting social rather than individual aims.

In the scientific world view public opinion interprets morality as the active quest for the best life by revealing the social nature of the highest good. It does not define this "highest good" as something prearranged and ordained by a higher occult power, the will of God, or as

the gradual unfolding of a fixed pattern of conduct, but rather determines what is good in the light of experience, by giving fullest publicity to all the facts of this experience in order that the one best way may be followed. Public opinion leaves the individual in charge of his own life, responsible for his own acts, and offers itself as a prop for his efforts to find his way through the jungle of experience.

Here we see in how far the new morality differs from the older moral code. It focusses our full attention upon human affairs; its purpose is limited to the consideration of human needs. It accepts the idea that the individual is to be assisted in his efforts to adapt to his environment through education, and that control over this environment and over human nature itself is possible through public opinion, which acts as the sole guardian of social values, and in consequence of moral judgments. Here is no reference to a divine lawgiver, here is no code of conduct that has been rendered fixed and unchanging by the fiat of God. On the contrary morality becomes a part of life, flexible, growing, ever-changing like life itself. Freed from the fetters that bound morality under the sanctions of a religious world view to an other-worldly way of thinking, mankind is making ready to go forward along new paths of social progress.

VIII

The growing importance of public opinion as the arbiter of morality is the most significant fact of modern life and serves to confirm our thesis of the decay of the religious world view. Modern social institutions were devised in order to enable public opinion to exercise its control. Whereas in the past public opinion scarcely existed and had no voice in the control of social life, in

Modern Times we witness the gradual rise of public opinion to the position of first importance that it occupies to-day. In the course of this development public opinion, which was first local and then national, took shape and became effective in the form of parliamentary institutions and the political organisation of the State. Government by public discussion, that is to say by public opinion, replaced government by divine sanction. The divine right of kings was by slow stages displaced by the sovereign right of the people, that found expression as national public opinion. We are now ready to go a step further. Public opinion is becoming international. A world public opinion is supplanting the older national public opinion. In order that this world opinion may become effective new institutional forms are required. Existing institutions must be modified if cultural progress is to be realised, and the new morality given free scope for development.

Government is nothing more than a medium for the enforcement of moral ideas. In our own times we feel the inadequacy of our governmental agencies to deal with many of the problems of social life, chiefly owing to the fact that new moral ideas have emerged which the existing technique of government is unable to enforce. In the new civilisation that is growing up about us, which modern education is promoting, and public opinion is moulding, the individual finds himself at loss to know where to turn when he seeks to reconcile the inherited institutions under which he is living with the new morality in the making. In looking for a more efficient means of realising personality and bringing about a close harmony between character and conduct new social motives are being developed. Here we come upon the third factor of the new morality—*freedom*.

IX

If the spiritual unity which the mind craves is to find means of expression, a new method of approach to the problem of freedom is required. We must seek to interpret once again the idea of freedom by taking into account many facts of experience, with which existing institutions are unable to deal. Political freedom, the moral ideal of the age that is drawing to a close, is too narrow a concept for the human spirit that looks to world unity, to humanity as the moral basis of a wider social life.

Whether or not the human spirit is capable at the present stage in the evolution of mind of realising the new freedom remains an open question. It all depends upon the success which attends the effort to give spiritual significance to the scientific world view. Henceforth conduct must of necessity be associated with science. Behaviour must be recognised as a matter for scientific investigation and control. A successful morality can only be realised if the new freedom offers a means of fulfilling the ultimate aims of personality. Efficient living requires that morality take into account the achievements of science. Biology, sociology, psychology, history and most of the other special sciences must be made use of in striving to attain a fuller, better life.

As science is essentially a living, changing body of knowledge, so our idea of a good life which morality would offer, must be mutable and changing. The fixed and unchanging dogmas of the religious moral code can here find no place. As long as behaviour was regulated by an other-wordly way of thinking, religious morality was adequate to meet the day-to-day requirements of living. Freedom was looked upon as a relief from the burdens of this life; liberation came at the end, after "life's fitful fever." It was dependent upon a divine will.

Ideas of freedom clustered about the core of a human free will patterned on the model of the divine will, which was of itself outside the causal series.

The scientific world view offers a fresh interpretation of freedom. If it shows us that we cannot escape from laws of determinism in mental life, and rejects the old idea of free will as unfounded, nevertheless it offers the means of learning how to choose from among various alternatives the one best way. If education makes possible a better adjustment to environment, and public opinion exercises the function of control, the new freedom is the result of an adjusted and controlled attitude of mind. Human nature is to be allowed free scope for development within the frame-work of the social order.

Freedom is not a prerogative, but a privilege of enlightened minds. It means the power to examine and criticise intelligently the world we live in, and to mould our behaviour accordingly. Intelligence is here enlisted in the service of morality. It would throw light upon the more obscure motives of behaviour, and in consequence a new scale of values arises, a new sense of social responsibility is developed. The individual, in so far as adjusted to his environment and subject to the control of public opinion, comes to realise that he is an integral part of the social order, that he has duties towards it, and that in turn society has obligations towards him. Here the conception of humanity takes concrete shape. The barriers that split mankind into isolated groups are broken through, and a widened social intercourse is made possible. Man no longer looks to the heavens above for his freedom, no longer is content with vague notions about the freedom of the will. Henceforth he looks to the world about him, and finds this world in which he lives a

well-ordered universe, a fit home for the human spirit to dwell in.

The scientific world view offers us a universe of our own making. It demands that each of us assume his share of the responsibility in so far as in his power lies. There is no room here for the shifting of this responsibility to some divine Creator. We must stand on our own feet. But we do not for this reason need to feel isolated in a baffling world. On the contrary if the new freedom means anything it is that we are to be in a position to make fullest use of the knowledge that science has to offer as the guide of our acts, and accept without reservation the fact that all of our actions depend upon human faculties. We would banish for all time the belief in an unconditioned free will with its fantastic quasi-magical powers, and substitute a clear-visioned realisation of the unity and continuity of life. Freedom means the opportunity to develop our innate capacities and powers, to make use of our latent abilities and stored-up energies in the pursuit of a better way of life.

X

The scientific world view offers us the pattern of a well-ordered universe. Here the new morality would do no more than point the way. The road lies open before us in so far as we are ready to turn to best account the opportunities offered. Freedom itself is nothing more than an opportunity to develop to the fullest our individual capacities, by making use of all of the knowledge garnered by science. In the first instance this freedom is finding concrete realisation as economic freedom. Until we come to understand the ultimate social and moral implications of the new world economy it is impossible for us to go forward.

When the physical foundations of the social order change, the foundations of morality must also be changed. We have shown elsewhere in some detail [1] the cultural changes that have taken place during the past three centuries. The new civilisation in the making requires a complete revision of our moral code. The new economy demands a broader interpretation of freedom, as opportunity for living a larger life.

The psychological equivalent of the physical well-being that the scientific technique of industrialism is able to ensure is moral freedom. This freedom is a state of mind that is shorn of the last vestiges of the superstitions of the religious world view, and finds in science a body of reference capable of endowing human experience with an authority of its own. The appeal of moral freedom is to social standards, that discount dogmatism, irrational religious notions and "rose-pink sentimentality." In the new scheme of things, personality, grounded on a more efficient adjustment to environment and control over human nature, a self-conscious realisation of the world as science reveals it, the rise of mind to the level of deity, are the high gifts that moral freedom has to offer. Here the historical God of religion is left far behind. The scientific interpretation of the unity of mankind would substitute *humanity* for existing national ideals. Life in its insurgence and irrefrangible unity here for the first time comes under the dominance of mind. The soul of man is no longer held to be a divine effulgence, but the creation of mind. It is experience that moulds and shapes our destiny—experience of the individual and of the race, through a ceaseless striving to harmonise all existence, bring order out of the chaos of life, and moralise mankind.

[1] Cf. my *Trend of History* and *Thirty Years of Modern History.*

Morality remains the ultimate fact of experience, the spiritual ground that makes possible a good life. Science by offering intellectual certitude in the place of the vague surmises of religion, marks a step in advance towards the emancipation of mind. Mankind to-day is standing on the threshold of mental maturity. The time has come to acknowledge the spiritual significance of science. It is not denied that we need high courage to undertake the adventure in the making of a new morality. Here is no seeking for a panacea or social palliative. The period of the adolescence of mind with its tangled skein of fears and joys, its emotional instability and intellectual inconsequence, its uncontrolled longings and self-conscious awkwardness, its mystical, magical methods of social control associated with religion, is a thing of the past.

With the advent of a scientific world view the noviciate of mind has been served. Life in its richness and sensuous beauty, its passionate striving, its unconquerable eagerness, its immortality, is part of the world of experience where science dwells. The progress of morality is marked by the rearrangement of the facts of this experience in a more orderly sequence. Science offers a better way to do so than ever existed in the past. It is a method of powerful efficacy. It presupposes a new type of mental organisation that finds no counterpart elsewhere in the universe. Such is the present-day prerogative of civilised mankind. Mind in coming of age is making possible a new morality, man-made for men. Here personality emerges as mind organised in such fashion as to discover the one best way, the moral way of life.

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